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CODES
Auth Electric Part 2
H0001-H3000
page 110

The National Locksmith®

May 1997
Volume 68, No. 5

The 21ST Century In Automotive Security

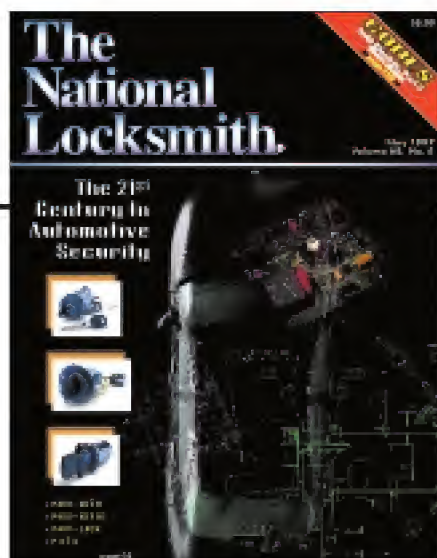


- PASS- KEY II
- PASS- KEY III
- PASS- LOCK
- P.A.T.S.

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On The Cover...



Strattec is the leading manufacturer of vehicle anti-theft devices. Just 10 short years ago, V.A.T.S. was the first introduction. Today, there are several different systems to contend with.

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The National Locksmith® ISSN #0364-3719 is published monthly by the National Publishing Co., 1533 Burgundy Parkway, Streamwood, Illinois 60107. Periodicals postage paid at Bartlett, Illinois 60107 and additional mailing offices USPS 040110. Subscriptions \$39.00 per year in the USA; \$52.00 per year in Canada; \$65.00 in all other countries. Single copies \$5.00 each. Postmaster, please send change of address to National Publishing Co., 1533 Burgundy Parkway, Streamwood, Illinois 60107. ©1997 by the National Publishing Company. All rights reserved. Printed in the U.S.A.



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you wish to read**

COMMENTARY



<http://www.TheNationalLocksmith.com>
User name: national User ID: G5fh84

Who do you remember?

We have several new books appearing this month which you will find of value. R.W. Staples has compiled a new volume called *Master Index*. This book is a tremendous reference guide, indexing years worth of articles and tidbits of information. Did you ever need to do a job and know you've seen an article on just this problem...but you couldn't even remember which magazine ran the info?

Well then *Master Index* is for you. It catalogues just about everything ever published in every locksmith source known to man, and puts that information right back at your fingertips. For more details see page 68.

Next on the list is *Foreign & Domestic Auto Service* by Michael Hyde. This manual contains over 300 pages of Michael's best writing on many of the most interesting vehicles on the road. Much of this information has never appeared in the magazine before. You get a ton of step-by-step service information, along with detailed photos. Michael's new book makes car service a snap. See page 13.

Finally, here is a book we've all been waiting for....*The Ultimate Technitips Collection*. Over 300 pages have been prepared for you including the most useful and clever technical tips and tricks ever submitted to this magazine by veteran locksmiths. To make the book particularly useful, it has been divided into categories such as Car Opening, Auto Service, Safe Service, Picking, Padlocks and much more. See page 13.

Speaking of Technitips, Tips Editor Jake Jakubowski has gone on a total rampage, and has rounded up about *two dozen* valuable prizes for year end, and a *kazillion* monthly prizes. You won't believe all the stuff you'll win when we publish one of your tips!

To enter the Technitips contest, simply send us your trick by e mail or mail, make sure you include your name and mailing address, then sit back and

wait for the UPS truck to deliver a load of goodies to your door. E mail us at NATLLOCK@AOL.COM or mail those tips by snail mail to: Technitips, *The National Locksmith*, 1533 Burgundy Parkway, Streamwood, IL 60107. Many thanks to Jake for rounding up all these incredible prizes, and to the good folks who donated them. (Jake is a large man and a little hard to refuse!)

On a more serious note, I got to thinking about Jack Roberts the other day, and how he did a lot for locksmiths as a writer for this magazine. A few other names of people who improved locksmithing before they passed, came to my mind: Stan MacLean (founder of this magazine), Jerry Connelley, Stan Maziuk, Sr., and others.

Why not send me an e mail or a letter and tell me who you remember from among the departed and what you think they contributed to our industry.

In an upcoming issue, I would like to recount these names by printing your remembrances in *The National Locksmith*.

The departed people you write to me about may be well known, but you may also write to me about someone in the industry who contributed without living in the spotlight. We owe a lot to those who came before us. Let's remember them together.

Marc Goldberg



Join our free E-mail list!

Receive locksmith info by E-Mail
Write us at: NATLLOCK@aol.com

Marc Goldberg
Publisher

Mango's Message

I don't need to tell you that the automotive industry has been changing at an accelerated rate over the past few years. There have been more introductions, innovations, and design changes in the last 10 years, than there have been over the last 50 years. Without a doubt, the front-runner responsible for much of the technology we are seeing today, is General Motors.

General Motors was the first to introduce front wheel drive. Others soon followed. General Motors was the first to introduce anti-lock brakes. Others soon followed. General Motors was the first to introduce an anti-theft ignition system. Others soon followed. General Motors was the first to introduce a supplemental restraint system. Others soon followed.

The latest introduction and innovation by General Motors, is called the "OnStar System." I am sure others will soon adopt this technology as well.

OnStar — which is currently available on the Cadillac DeVille, Eldorado and Seville — is a two way communication system between the vehicle and the OnStar Service Center, which offers an astonishing amount of security and services.

The system consists of a Global Positioning Satellite (GPS); Specially programmed, hands-free, voice-activated cellular telephone system; and a transmitter/receiver. OnStar costs \$895.00 plus installation charges for the hardware, and there is a \$22.50 per month subscription fee.

The OnStar Center is located in Farmington Hills, Michigan. There, representatives man phones and computers 24 hours a day, seven days a week. When a driver contacts the OnStar Center, an attendant can download the vehicle's location and call up a map of the area on a computer screen. The attendant can tell precisely where the vehicle is, even if the driver cannot.

The capability of the OnStar System is quite remarkable. Need emergency roadside assistance? One touch of a button (or a voice command) on the cellular phone connects you with the OnStar Communication Center. An advisor will locate you through a cellular link and dispatch help. You do not even need to know your location. The Global Positioning Satellite does it for you.



The Orbiting Locksmith!

If the security of the vehicle is breached, or the car is stolen, a signal is automatically sent to the OnStar Center. The Global Positioning Satellite is used to locate and track the vehicle, the owner is notified of the occurrence, and the local police department is called with an exact location of the car.

In the event of a collision in which the front air bags are deployed, an emergency signal is automatically sent to the OnStar Center. An OnStar representative will respond by attempting to contact the driver of the vehicle with a phone call. If there is not a response to the call, emergency help is sent to the location, once again with the aid of the Global Positioning Satellite.



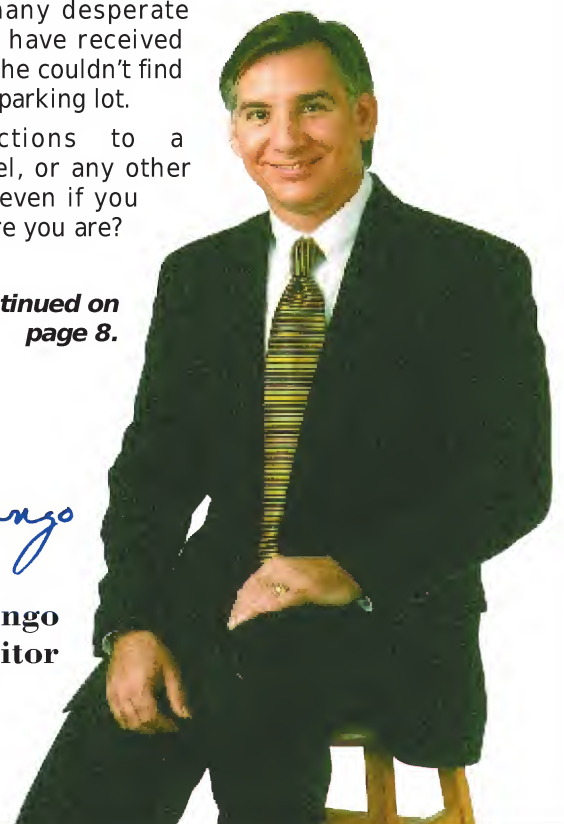
What if you misplace the car in a crowded parking lot? No problem. The OnStar Center can activate the vehicle's lights and / or horn, helping you find it in a hurry. My wife could sure use this feature. I can't tell you how many desperate cries for help I have received from her when she couldn't find the car at a mall parking lot.

Need directions to a restaurant, hotel, or any other establishment, even if you don't know where you are?

Continued on page 8.

Greg Mango

**Greg Mango
Editor**



Mango's Message

Continued from page 6

No problem. The OnStar Center can give you turn-by-turn pinpoint directions to your desired destination. You can even record up to two minutes of directions by pressing a button on the cellular phone and play them back as needed. My wife could use this feature as well. If she doesn't lay bread crumbs down before she goes around the block, she is soon calling 9-1-1.

These are just a few of the capabilities currently provided by the OnStar System, but by far not the only ones. The core of the OnStar System is the Global Positioning Satellite. Without it, constant vehicle position tracking would be impossible. With it, every movement the vehicle makes — day or night — can be tracked, and its location pinpointed. That's a pretty scary thought, isn't it?

Under the guise in which the OnStar System is presented, it appears to be a very beneficial tool for the recipient. But what if that tool becomes a device used to not only track every move of a car, but *your* every move? Suddenly an innovative device, becomes an innovative intrusion on your privacy.

That may seem like a statement coming from a paranoid schizophrenic, but that's besides the point. Whenever we knowingly and willingly conform to a system in which every move we make, or every word we speak, can be monitored, as well as recorded and stored in a data

base for future reference, there is cause for concern. Most developments are planned and implemented with the best of intentions.

Unfortunately, history has proven that when a tool as far reaching and potentially powerful as the OnStar System, is utilized for service other than what it was initially intended for, the possible consequences can be menacing. Technology is a wonderful thing, until it runs amok, or falls into unscrupulous hands.

I'm sure when the OnStar System was initially conceived, it was not General Motors intention to be the spy-in-the-sky. That possibility and capability, certainly does exist, however.

The OnStar System is in its infancy and system quirks are still being ironed out. The selection of services currently available, however, is just a sampling of what the future potential is. The OnStar System is expected to expand, including such services as: Real time traffic conditions; an "Engine Check" allowing a technician to connect with the car and diagnose all computer-controlled operations while the

car is being driven; Entertainment features like books on tape, and much more.

There is one feature however, that is currently available with the OnStar System that will benefit the owner, but could have a detrimental effect on a service most locksmiths currently provide. Lockouts!

If the keys are locked in the car, OnStar can open the doors remotely with a cellular signal! One call to the OnStar Center with the appropriate identifying information is all it takes. And, the keys can only be locked in the car if they are removed from the ignition. If the keys remain in the ignition when in the off position, the doors can not be locked.

Since the OnStar System is currently only available on the Cadillac line of cars, this may not seem like much to worry about. That is until you learn that in addition to the current Cadillac offerings, in 1998, OnStar is expected to be available on the Cadillac Catera, Oldsmobile Aurora, Buick Park Avenue, and selected Chevrolet and GMC truck and sport/utility models. And, just as Vehicle Anti Theft Systems (V.A.T.S.) was initially only available on the Corvette, the OnStar System will eventually be available on all General Motors vehicles as well.

Remember, we're only talking about General Motors vehicles that will eventually have OnStar Service capabilities. What's going to happen when Lincoln, Lexus, Mercedes, Infiniti, BMW, Ford, Chrysler, Toyota, Nissan, and every other auto manufacturer incorporates a similar system?

The days of locksmith's opening vehicles with bent rods as we now know it, will eventually fade away. Yes, the writing is on the wall and change is in the air. With electronic locks fighting to gain supremacy, remote keyless entry with transmitters the size of a thumb nail, vehicles that can be unlocked with a signal transmitted from Michigan, and licensing for all on the horizon, the locksmith of the future will be a far cry from his brother of today. Enjoy it while you can, and if you expect to survive, keep up with technology.

RL



M A Y 1 9 9 7

Letters

The National Locksmith is interested in your view. We do reserve the right to edit for clarity and length.

A Side Splitter

The article "How Good Of A Locksmith Are You?" written by Tony Blass, is the funniest article I have read in a long time. I laughed so hard I had tears in my eyes. I have not laughed so hard in a long time. Congratulations, Tony, you helped make my day.

*Bill Cary CCL, CST
California*

Member In Need

An LSA member is looking for a supplier who would have about 30 rim cylinders with a lazy cam in an SC-1 keyway. It is designed to replace the rim cylinder portion in a Yale mortised latch lock. He is having a difficult time even locating the product. Does it exist? If you know where they are available, call: 810-296-1256 or fax: 810-296-2184.

*John Hubel, StarFleet Security
via Fax*

Bates Book The Best

Thought I would put in a plug for your "Modern Safe Locks" book by Mark Bates. The other night I received a frantic call from a manager at a local Applebee's saying he could not get into the safe. It was working fine earlier, but now would not open.

The safe was an AMSEC with a digital lock. Although I do service work for AMSEC, the KPL 2000 lock was not in use when I took the certification class. With the Modern Safe Locks book, I was able to diagnose the problem over the phone as a simple lock down time delay.

The manager called me back after waiting out the delay period to thank me, and gave me a promise for ALL his future business. He also invited me for a free dinner for two. The Modern Safe Locks book is the best investment I ever made.

*Richard Cybrynski
North Carolina*

Guns On Guard

It is refreshing to read about firearm safety devices in your magazine. Whether one agrees with private firearms ownership or not, does not matter considering the number of firearms in existence, which by the way numbers into the multi-millions. This accounts only for U.S. production.

I think that proper training is better than any add on device, as firearms are already chock full of safeties, and folks still figure out ways to blow their toes and heads off unintentionally. But, I have to agree, the SAF T LOK looks good.



By the way, firearms accidents are still at an all time LOW, no matter what Sarah Brady claims!

I agree with Mr. Landrum about contacting the Bureau of Alcohol Tobacco & Firearms (BATF) concerning installation of SAF T LOKS. This is the proper thing to do, however, don't waste your time calling, a letter could be sent and answered before you get off hold. Besides, if you ask the same question to 4 different BATF agents, you will get 4 different answers. The BATF has not been accused of entrapment for nothing.

You may misplace your letters authorizing key duplication, but DO NOT misplace your answer from the BATF! Any gun shop will have their address.

Firearms safety questions? Call the authorities, the National Rifle Association at: 800-NRA-3888, or again try a gun shop to get an address. Thanks for the soapbox.

Ronal G. Ryder

The National Locksmith
1533 Burgundy Parkway
Streamwood, IL 60107
Attn: Editor

Continued from page 10

A Mortal Mistake

In your February 1997 "Beginners Corner" article on changing the combination on the 1000 Series Simplex Combination Lock, one small step was overlooked. If a beginner tries this method, he will not be able to change the combination and he or she will not know why.

It should read insert change key and turn right (clockwise) until you feel a slight click. This is what is necessary to depress the lockout slide. Then back left until key stops. Then proceed as outlined in the article.

Just don't want to see anyone run into a problem on this. When it comes to problems, I can say I've been there and done that. Thanks for an otherwise very good column.

Paul Gannon
Missouri

Editor's Note: Thanks for bringing this to our attention Paul. I also received an e-mail from Carl Hedges pointing out our mistakes as well, and you are both absolutely correct, there was a mistake in the changing instructions given. Correct changing procedure for the Simplex 1000 series is as follows:

1. Turn outside knob clockwise fully to stop, then back.
2. Press in existing combination.
3. Turn combination change sleeve with spanner wrench clockwise to stop, then counter-clockwise to stop.
4. Turn outside knob clockwise fully to stop then back.
5. Press in new combination firmly.
6. Turn outside knob once clockwise until latch is retracted.

Enter new combination again and turn outside knob to assure operation.

Thanks again Paul and Carl for bringing this to our attention. This just proves that the most perceptive and astute locksmiths in the industry read *The National Locksmith*.
Greg Mango

You Can Do Better

I eagerly opened my March 97 issue of "The National Locksmith." As usual, I began to read from cover-

to-cover. When I arrived at page 27, the article on "Servicing the 1995 Saturn," there was a heavy brochure - GLUED -- to the text of the page. As carefully as possible, I tried to remove it without damaging the article below. Alas, I was not successful and much of the left column remained glued to the Morse ad, leaving the page in a very unreadable condition.

Articles like the one on the Saturn are the primary reason I subscribe. I am extremely unhappy that the article was damaged in such a careless, thoughtless manner. Will you publish a reprint?

In the future, please refrain from gluing any ads to pages in your magazine, which are intended for reading. It spoils an otherwise great publication.

safeman @ Clemson .campus.mci.net
E-Mail

Publisher's Note: Our apologies to everyone for this problem. Normally, inserts are glued lightly, and are easy to remove without damaging pages. In this issue however, the glue was run too heavy, ripping the page it was attached to. Therefore, inside this issue, we have reprinted the entire article again. Enjoy!

Marc Goldberg

Increasing Market Share

I want to take advantage of this forum to address an issue which I feel will benefit all of us - the manufacturers, the distributors, and you, the locksmiths.

High security is one of the last safe havens for locksmiths - and one you should be taking advantage of every day. I don't have any hard figures, but it's my guess that less than 1 % of all cylinders sold in the United States today are high security. Well, I have an idea on how to increase those numbers. About 7 years ago Henrik Hall, the President of ASSA, was faced with a similar situation in Denmark. He asked himself, "How can I increase total market share for high security cylinders?" The answer was: Through insurance companies. He felt that if Ruko could increase the awareness of insurance companies to the benefits of high security locks,

the insurance companies would, in turn, increase the awareness of the consumer.

Look at smoke detectors. 20 years ago, nobody even heard of them. Today, is there anyone without at least one in their house? Probably not. Why? increased public awareness. Your insurance company gives you a break on rates because you have one. Why not high security locks?

If we, as high security lock manufacturers, can convince insurance companies that our products reduce break-ins, they will provide the same type of discount on homeowners or business insurance for those customers who install them. So how do we accomplish this?

I propose that all the high security lock manufacturers form a committee to investigate the potential for a national movement to increase the awareness of insurance companies to the benefits of high security locks. We don't have to stop there. Police Departments, and local and national safety groups, also need to hear our message. Again, if this is done by an association rather than a company, it is seen as a public service announcement rather than a commercial.

If any or all of you wish to participate in this ideal you can contact me personally. I would suggest an initial meeting at the NLSA Conference in Atlanta, or the ALOA Convention in Reno. At that time, we can set the parameters by which each company wishes to participate.

So, gentlemen, let me know what you think. With or without you, ASSA is moving forward with this. I would prefer that it be with you, because combined we would be quite a force. Oh, and by the way. That story about Ruko and the Danish insurance companies? Today 60% of all cylinders sold in Denmark are high security.

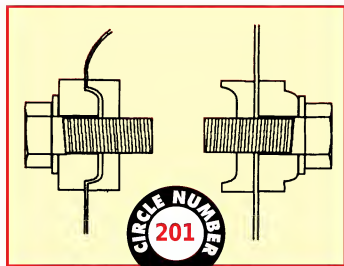
Mike Crowder
National Sales Manager of ASSA



The reprinted article on servicing the 1995 Saturn starts on page 19 with an additional article on servicing the 1997 Saturn Ignition Lock following on page 27.

SECURITY CAFÉ

Lock Reforming Tool



Lock Technology's Model LT700 lock reforming tool instantly reforms damaged lock openings to their original contour. The four piece tool works on GM, Ford, Chrysler and most import cars by tightening the bolt with a ratchet or an impact wrench until the damaged hole is restored to its original shape. The tool is especially helpful to the locksmith who is repairing locks on an auto which has been damaged in an attempted burglary and saves having to send the car to a body shop for repair.

T.Q.M. Drill Sharpener



An affordable drill bit sharpener that is a precision machine tool. T.Q.M. #750 is an American made drill bit sharpener that sharpens 3/32" up to 3/4" drill bits, with both 118 and 135 degree points, it will also split the point. This five pound wonder is about the size of an electric can opener and comes standard with a diamond wheel for HSS, cobalt and carbide bits, at a price under \$200. Very portable, plugs into standard house current and is UL approved for your safety.

"Economy with the benefit of precision is a must for the small machine shop or home do-it-yourselfer," states Tina Keefer, partner with T.Q.M.

Company. "We are a world wide factory (Darex) distributor for this much needed product.

I-Core Combination Tray

A-1 is pleased to introduce a New Combining Tray for I/Core (A-1 #12). Manufactured of high density foam and PVC, this tray will hold up to twenty cores for combining. Additional slots are included for 100 keys (5 keys per core) and for small tools such as ejector pins and capping or alignment tools. Use this great Time Saver for combining cores

equipment is ideal for hotel and motel industries, Universities, school districts and housing authorities as well as locksmiths. It is useful when large number of keys must be stamped with identifying numbers and letters.

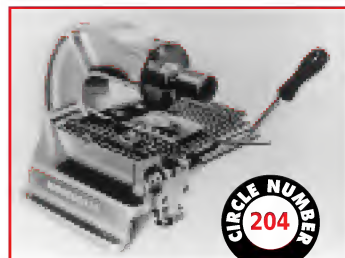
The equipment ranges from the economical Model 23 Typeholder to the Model 137 motorized bench marking press. Included is the Model 40B (shown) which features a large easy to read dial and a carriage table which automatically advances after each impression.

Security Café

DROP IN FOR
TOOLS, TECHNOLOGY
& EQUIPMENT

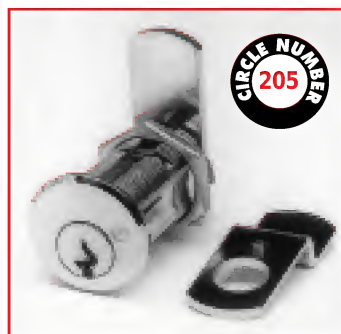
in the shop and for transporting them into the field.

Simplified Key Marking by Stamp & Tool Company



A line of specialized key marking equipment is being featured by Numeral Stamp & Tool Company, Inc. This

DCN Cam Lock by Olympus



The Olympus DCN Cam Lock has combined quality, dependability and style. The ease of rekeyability is due to our patented retaining clip.

The lock is supplied with reversible straight and offset cams that meet the requirements of 12 locking positions. Also supplied with the DCN is a retaining stabilizer plate that prevents the hex nut from backing off and it prevents the lock from being turned with a screwdriver. The DCN features a new 1" face (no trim ring required) with the Olympus logo. It is available KA, KD and MK in the National 4291 keyway with four cylinder lengths (1", 1-1/8", 1-3/8", 1-3/4").

New Electric Strike From Lock Design Company



The Strike-O-Matic 2000 for use with Dor-O-Matic and Kawneer concealed vertical rod exit devices. This strike eliminates the need for pullman latch substitution! These exit devices which are difficult to convert can now be easily and cost effectively controlled with this new electric strike. The strikes are available in all voltages, duties, finishes, fail-safe or fail-secure, single or double door configurations. Its patented design and stainless steel construction insure quality and reliability. Recommended for use on double door entrances. Applications include: card access systems; telephone entry systems; remote electronic or computer controlled security systems; automatic fire ventilation systems and more.

Continued on page 16

S E C U R I T Y C A F É

Continued from page 14
**7900 Series Heavy
Duty Cylindrical
Leversets**


CIRCLE NUMBER
207

Taylor's 7900 Series Heavy Duty Cylindrical Leversets are available with a 25 year warranty. They are UL listed and are listed for use with fire-door applications up to 3 hours. Meets or exceeds requirements of BHMA/ANSI A 156.2 series 4000 grade 2. Meets ADA requirements. Available in dull chrome finish in the following functions: passage; privacy; entrance/office; storeroom lock; and classroom lock.

**New Products
From Jet**


CIRCLE NUMBER
208

Five new automotive keys consisting of the Ford Probe, Escort, Contour and the Mercury Tracer and Mistique are featured along with General Motors Malibu, Cutlass and Grand Prix for 1997.

Jet Hardware is also pleased to announce that they have been licensed to produce new FORD "ORIGINAL" replacement key blanks with the FORD trademark. The first four (4) of a series is now available from your distributor. They include the Ford Contour and Escort and the Mercury Mistique and Tracer.

**System 2 Expands
to 16 Doors**


CIRCLE NUMBER
209

Corby's latest product, System 2 Network version 5.1 was designed so more doors, more users and more features could be added at any time...quickly and easily. Everything is built into each system including the 2nd door, extra time schedules, 26 bit Wiegand card inputs, full modem control RS232 outputs and RS485 networking. With a single phone call, many of these features can be activated in seconds.

A standard System 2 supports two doors and 485 users. The system can easily be expanded into a large 16 door system, by linking multiple units together using a high speed RS485 bus. Users can be added or deleted in seconds using the built-in programming keypad and 48 character Liquid Crystal Display. With the addition of the Full-Duplex RS232 feature a Video Display Terminal or PC can be added for on-site or remote programming.

**Liberty's 1997
Presidential Series**

The all new 1997 Presidential combines a new Omega Labs 1550 degrees Fahrenheit fire certification, state-of-the-art glass relocker, larger door bolts and a more spacious body with a distinctive new beveled look.

All Presidential safes

feature the new one-and-a-quarter inch HiSecurity composite door and massive one-and-a-half inch insulated body, providing the ultimate in security and fire protection. The massive door and body provide a defensive barrier of outer and inner steel walls housing proprietary insulation material, keeping valuables safe from temperatures up to 1550 degrees Fahrenheit for 30 minutes.


CIRCLE NUMBER
210

Each door bolt is precision fitted into Liberty's EZ-Glide bolt protectors for a smooth, tight and secure lockup.

**Secure Entries
With the New Door
Sentry Video
Intercom**


CIRCLE NUMBER
211

The Door Sentry features a compact door camera with the widest viewing area of any system of its kind,

allowing a secured entry door to be safely answered from up to two room stations. The camera is infrared for a sharp picture day or night, and includes an automatic backlight control and illuminated call button. The room station has a 4-stroke chime, door release button, and voice/chime volume controls.

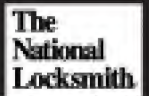
The Door Sentry Set (MK Series) is simple to install using the same two wires as a doorbell, includes a video door station, room station, and power supply.

**ETC'scessories, Inc.
THE CAP**


CIRCLE NUMBER
212

ETC'scessories introduces THE CAP® for the millions of car owners who depend on steering wheel bar locks, like "The Club" or "Lockjaw" to protect cars. THE CAP® plugs the steering wheel's security weakness, completely concealing the steering wheel "rim to rim", protecting it from cutting or snipping.

Made out of 18 gauge cold rolled carbon steel, THE CAP® fits over the steering wheel and is locked in place by the steering wheel bar lock. THE CAP® is available in 16" and 17" diameters, to accommodate both foreign and domestic vehicles. It offers the highest level of visual and physical theft deterrence and protects against air bag theft. **TRIL**



Servicing the 1995 Saturn

Reprinted from March 1997



1. The 1995 Saturn SL1.



by Tom Seroogy
& Thomas Mazzone

The 1995 Saturn is similar in almost all respects to previous year models (as far as locksets are concerned) with the exception of a mid-year change to the ignition. Saturn produced a number of different models in 1995 such as; A 4-door sedan with model designations SL, SL1 and SL2; A 2-door coupe with model designations SC1 and SC2; And a wagon with model designations SW1 and SW2. The SL is the base Saturn coming without optional packages. For the locksmith, however, lock cylinders are identical for all vehicles.

On some models, electrical switches have been added to the back of the lock, but the cylinder is identical to all other models, none the less. Excepting the removal procedure for the tailgate/trunk lock, removal procedures for the ignition and door lock are identical for all Saturns. This article covers the lock removal for a 1995 Saturn SL1 (see Photograph 1.)

The 1995 Saturn includes a driver and passenger side airbag. While it is not necessary to remove the airbag module or steering wheel to remove and service the ignition lock, it is advisable to disconnect the battery for safety's sake.

IGNITION REMOVAL

The ignition on the Saturn is part of a two-piece, clam shell column. It is manufactured by All-Lock (part #1359) and is retained in the lock housing by a single spring button retainer. To remove the ignition, a key must be used or the lock picked to turn the plug to the ACC position. At this point the retainer can be depressed and the cylinder removed (see Photograph 2).



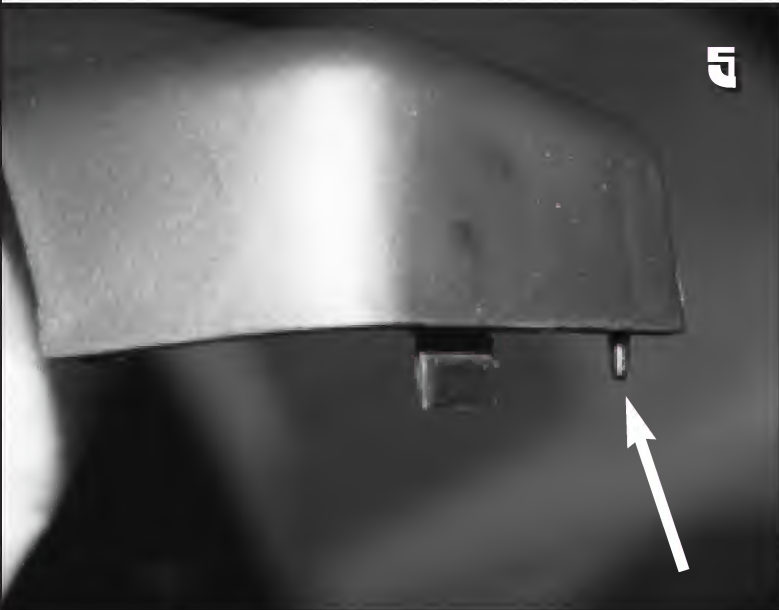
2. The Saturn column and ignition.



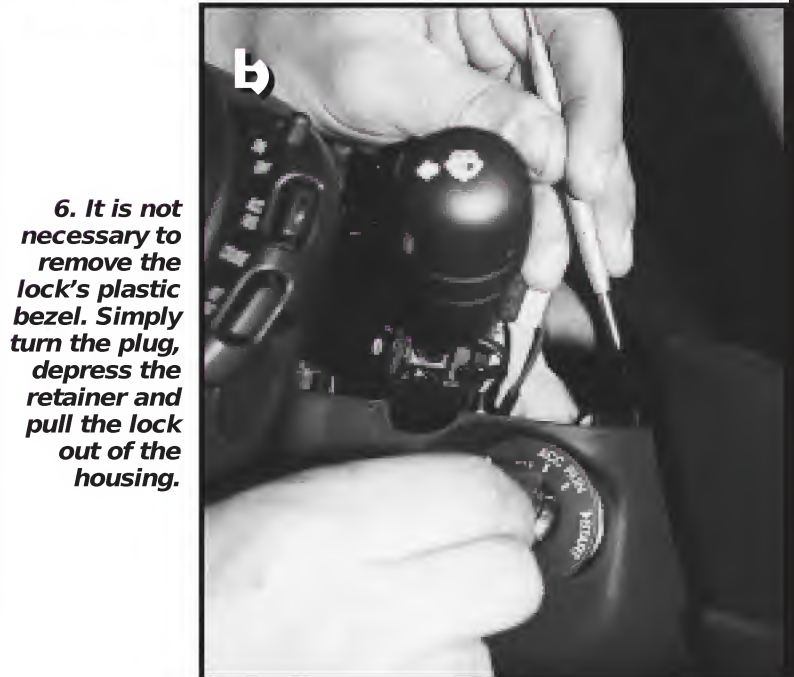
3. The bottom of the steering column shroud.



4. Remove the column shroud screws using a 7/32" socket. It will be necessary to modify the socket slightly to allow access to the two hidden screws.



5. An alignment tab is found on each side of the upper shroud. Be careful not to break them while separating the shroud halves.



6. It is not necessary to remove the lock's plastic bezel. Simply turn the plug, depress the retainer and pull the lock out of the housing.



7. Dropping the lower shroud exposes the lock housing. Before a new lock is installed, the lower shroud must be placed back in position.

To remove the ignition, disconnect the battery. Loosen the tilt lever and tilt the steering wheel up to give better access to the column shroud screws (see Photograph 3). Here, five screws are found, three are immediately visible and two are found inside recessed areas located just behind the steering wheel.

Remove the screws using a 7/32" socket. While other procedures recommended removing these screws with a 5mm socket, we found this dimension to be too small.

Remove the three exposed screws first. Before removing the two hidden screws, it may be necessary to grind down the outer diameter of the socket. The extremely narrow recess that these screws are mounted in do not provide ample room for the standard width socket. By making the simple modification to the socket, the screws are easily removed (see Photograph 4).

With the screws removed, gently remove the upper column shroud. Be careful as there is an alignment tab on each side of the shroud that are easily broken (see Photograph 5).



With the top shroud removed, there is easy access to the ignition's retaining button. Unlike other published articles, it is not necessary to remove the lock's plastic bezel. Simply use a key or pick the lock to turn the plug to the ACC position. Depress the retainer and pull the cylinder out (see Photograph 6).

While reassembly is accomplished by reversing the procedure, it should be noted that the lower column shroud surrounds the ignition cylinder. Before the cylinder can be reinstalled or replaced, the lower shroud must be placed back into its assembled position (see Photograph 7).

DOOR LOCK REMOVAL

Simply stating that the outside door panel of the Saturn must be removed in order to service the door will bring nights of sleepless torment to most locksmiths. This unfortunate response, I think, is due to the service nightmare locksmiths encountered on the Pontiac Fiero door lock.

Often referred to as the "Bloody Knuckle," the Fiero door panel is an incredibly difficult one to remove without injuring one or both hands and/or breaking the door panel. Fortunately, the "Saturn Experience" is just that - an "Experience" - a simple, well thought-out door system. For despite having to remove the outside body panel to service the door lock, its removal is much simpler to accomplish than most inner door trim panels. In fact, the panel is easily removed in four steps.

The first step is removing the door handle. Unlike many vehicles today, the door lock and door handle are not part of



8. The Saturn door lock and handle.

one unit. Instead the door lock is separate and is surrounded by a black plastic bezel. This bezel is part of the body panel and does not need to be removed (see Photograph 8).

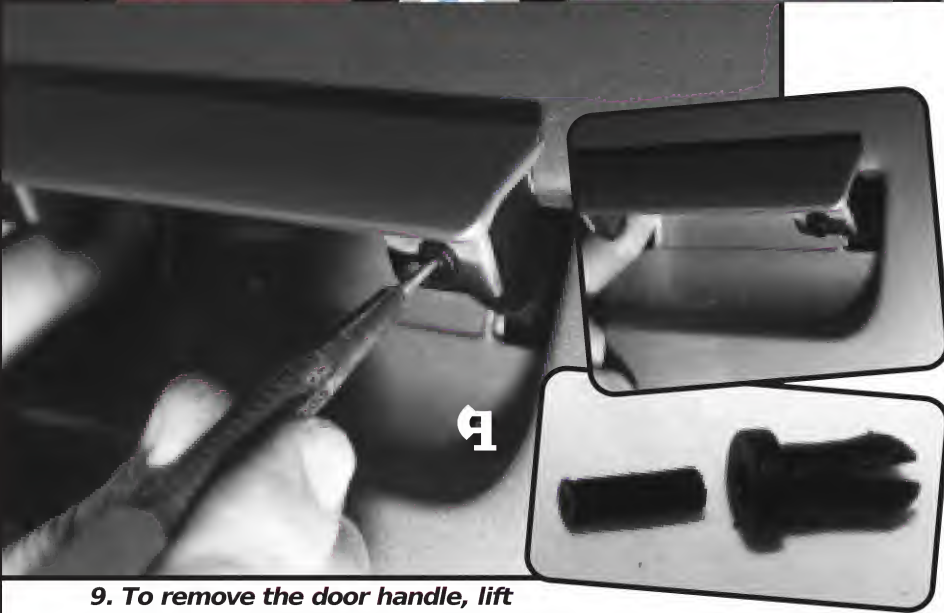
To remove the door handle, gently lift it up. This will expose a small plastic, two-piece clip. Use a small punch to press the small button found at the center of this clip. Gently pry the clip out (see Photograph 9). This allows that end of the handle to slide off the handle lever arm. Sliding the handle over removes it from the other handle lever arm (see Photograph 10).

The second step is to remove the mirror. Start by removing the inside trim piece that covers the mirror mounting bolts. One screw holds it in place. The upper end of the trim piece is covered by some of the rubber window molding. Gently pull it down and out. If the rubber molding



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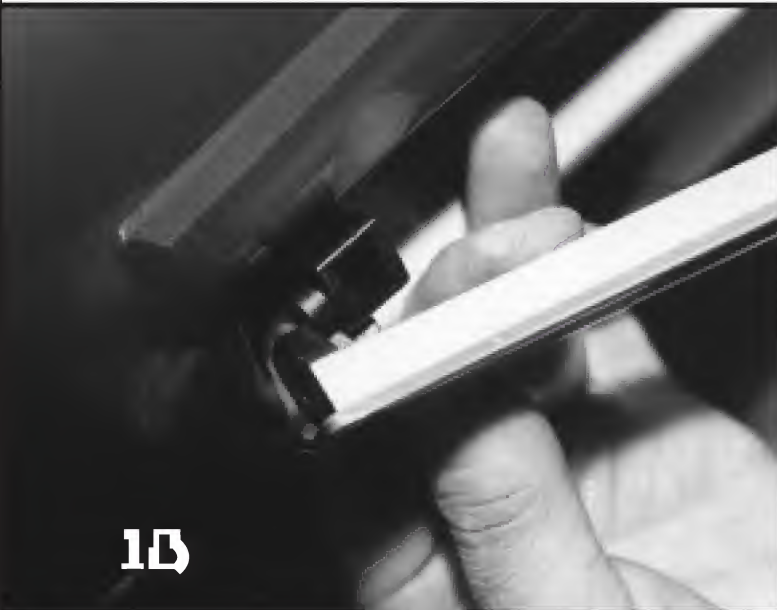
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9. To remove the door handle, lift the handle, depress the center of the retaining clip and remove the clip.



11. Remove the trim piece that covers the mirror mounting bolts, and disconnect the electrical connector.



12. Remove the three 10mm bolts and mirror.

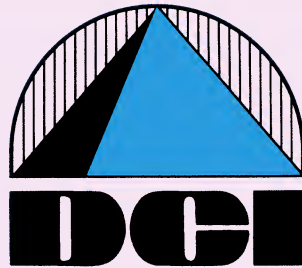




13. The belt molding is friction fitted. Simply roll the piece back to remove it from the door.

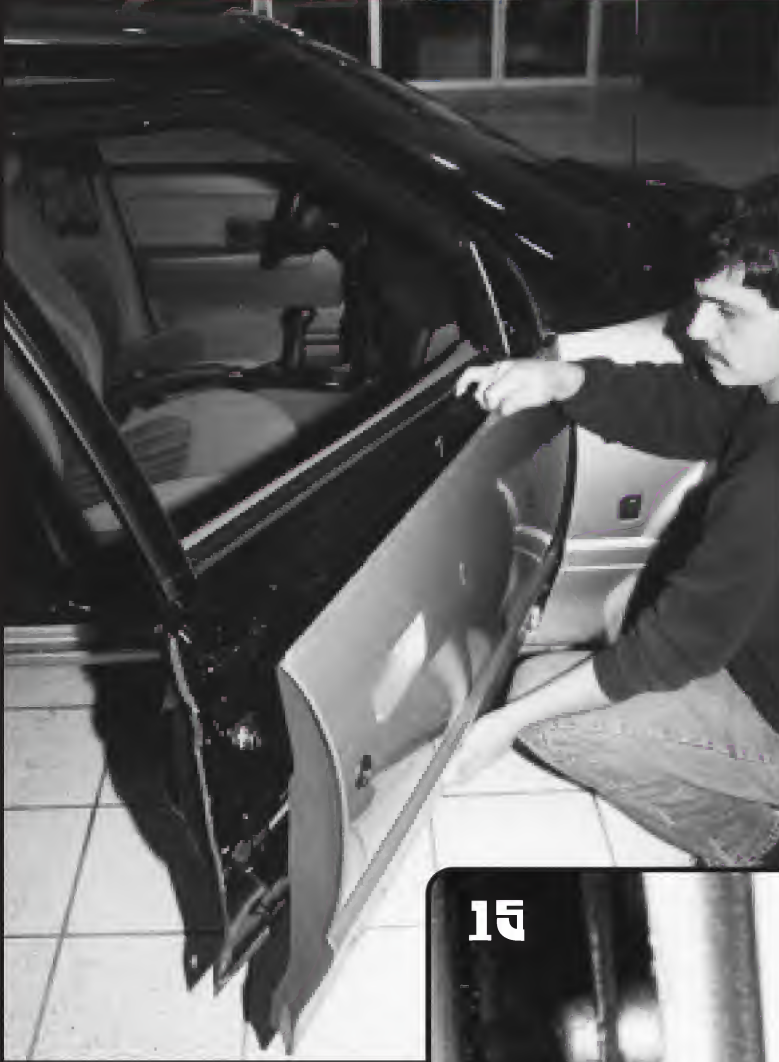


14. Remove the nine T30 Torx head bolts that hold the body panel to the car.

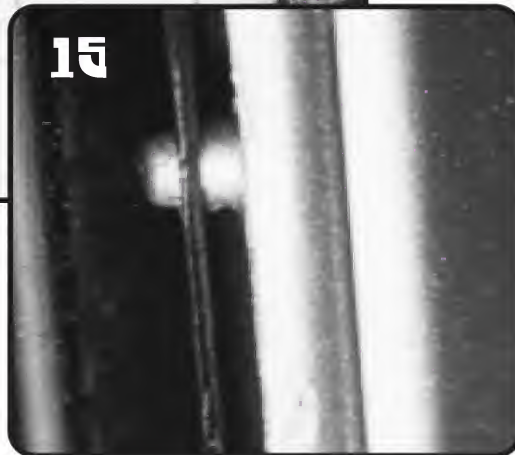


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15. The door panel can now be removed. When reassembling, remember to properly mate the alignment button on the body panel and its matching hole on the door frame.



16. With the panel off, all door elements are exposed, including the easy to remove door lock.



comes out, it will snap back easily when the trim cover is replaced (see Photograph 11).

Next, disconnect the electrical connection to the mirror's position controller. Then use a 10mm socket to remove the three mirror mounting bolts (see Photograph 12).

When replacing the mirror and the trim piece, remember to properly replace the sound dampening foam pad!

Step three is to remove the belt molding or outside window weather-strip. This is a friction fit piece that is easiest to remove by starting up near the front (mirror end) and gently rolling it back off the vehicle. There is a tab at the latch side of this piece that fits into a slot in the body panel, be sure that this is not broken (see Photograph 13).

Step four is to remove the nine bolts that hold the outside panel to the vehicle. These bolts require a T30 Torx driver bit for removal, and are evenly spaced around the perimeter of the inside door edge (see Photograph 14).

With the bolts removed, gently lift the panel away from the vehicle's door frame. There is a small, black plastic piece found at the top, hinge side of the panel. This piece overlaps



17. The trunk lock on the '95 SL is beneath two body panels and part of the deck lid.



18.
Use a 10mm socket to remove the six bolts holding the top body panel in place.



19. **Use a T30 Torx driver to remove the lower body panel.**

or traps the window seal at this part of the door and is easily broken if you are not aware that it is there. Be careful.

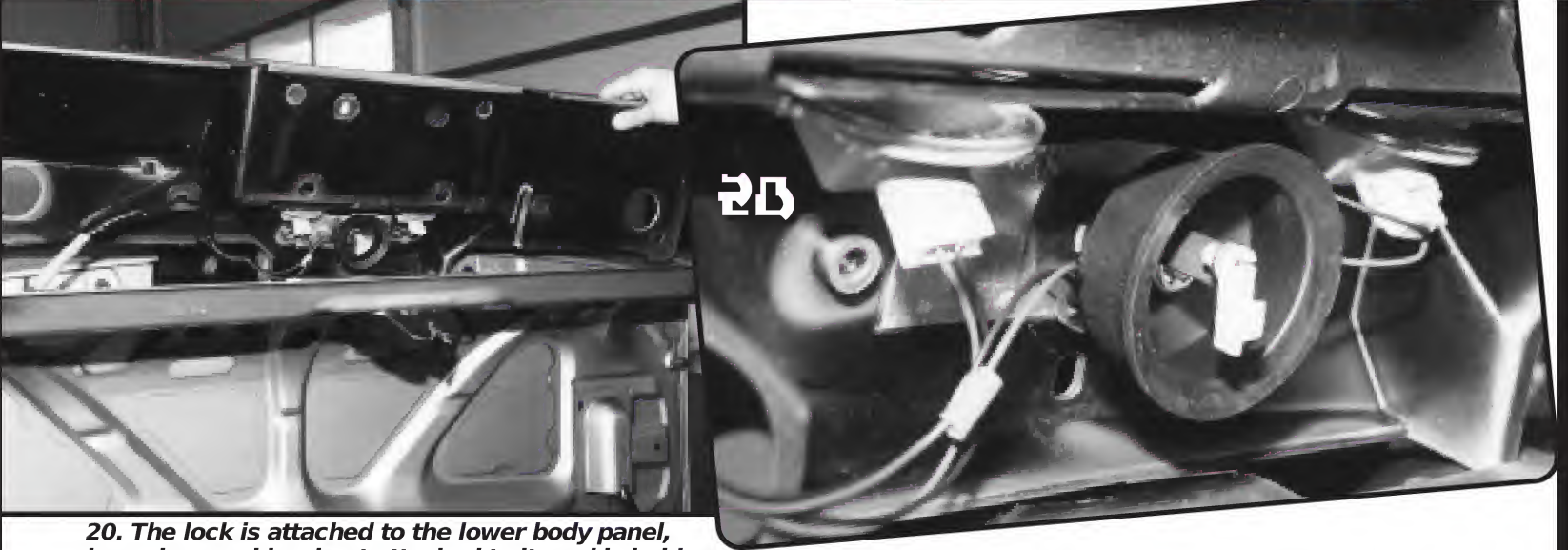
Also, during reassembly, there is a small alignment button on the inside edge of the body panel. This button fits into a mating hole on the door frame and helps with the alignment of the door panel (see Photograph 15).

With the panel removed, there is clear and easy access to the door lock. Visible is the complete door system, including the window components and the lock and latch components. As seen in the photograph the lock and latch linkage are



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20. The lock is attached to the lower body panel, has a large rubber boot attached to it, and is held in place with a common horseshoe spring clip.

horizontal and fully exposed. This makes for an easy opening. The door lock is held in place with a common horseshoe spring clip that is easily removed (see Photograph 16).

TRUNK LOCK REMOVAL

While requiring the removal of two body panels, the trunk lock of the '95 SL is also easy to remove (see Photograph 17).

To remove the lock, open the trunk and use a 10mm socket to remove the six bolts that hold the top body panel in place (see Photograph 18). With this panel removed, two of the five screws holding the panel in place can be seen.

Use a T30 Torx driver to remove these five screws. Two will be found on each side of the license plate, one is found underneath the license plate (the plate will have to be removed), and the last two screws are inside the rubber bumpers found at the corners on the inside edge of the deck lid (see Photograph 19). With the screws removed, lift up and remove the lower panel.

The lock is part of this lower panel, has a large rubber boot attached to it and is held in place with a common horseshoe spring clip (see Photograph 20).

That concludes the service procedures on the '95 Saturn. Admittedly, not the easiest vehicle in the world to service, but it really does look much more difficult than it really is. After you get a few under your belt, you should have no problem, and the fear will subside. **TRIL**



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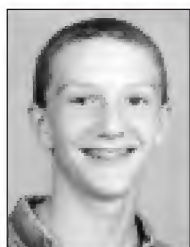
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Servicing the 1997 Saturn Locks



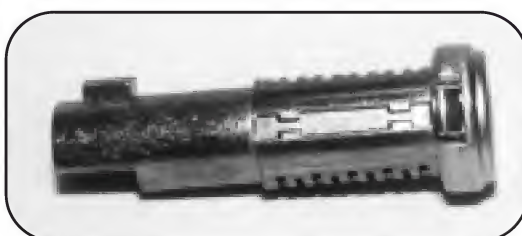
The 1997 Saturn brings a whole new key system to light for the locksmith. The keys are identical to the large Corporate Head design recently released by General Motors Oldsmobile Cutlass, Chevrolet Malibu and Corvette. Like GM, this key uses the 75 groove keyway, but instead of including 10 cuts, only 9 cuts are utilized by this system. This can be a little deceiving, as the factory supplied keys include all 10 cuts of the GM system. The actual code series, however, includes only nine cuts in the bitting. If using GM spaces and depths, using cuts two through ten should allow key generation (see Photograph 1).



by
Tom Seroogy, II



1. The 1997 Saturn key is identical to the newly released 1997 GM Corporate Head key, with the exception that only 9 cuts are used.

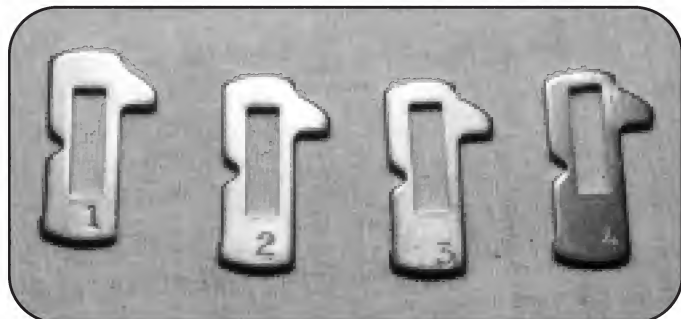


2. Except for the ignition plug (above), these new locks require the locksmith to assemble and insert the sidebar into the lock plug.

Mercedes, VW, Porsche and Audi. Huff also retains the European mentality of dealer-only supply routes. This means that parts, components, and keys are currently only available to the locksmith through Saturn dealers. Breaking with the European tradition, however, Huff supplies lock sets to Saturn dealers as non keyed, individual lock service packages only. Complete, keyed service sets are not available through the dealership.

All locks on the Saturn are sidebar locks, and both the wafer tumblers and the sidebar prevents plug rotation. This is different from the typical GM sidebar system, where the wafers are an integral part of the plug, and only the sidebar prevents the plug from rotating.

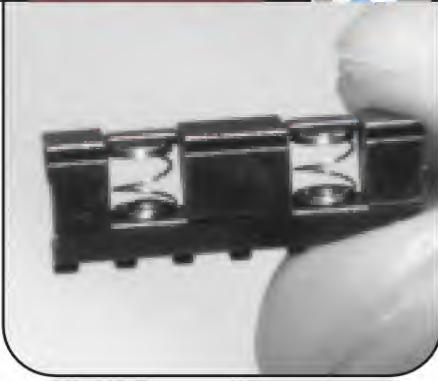
Also unique to this system is a sidebar that must be assembled into the lock plug. With the ignition plug being the exception, all lock service packages for the doors and trunk require that the sidebar be assembled and inserted into the lock plug. Due to its unique design, however, the sidebar retainers are integral to the plug. Thus, there is no



3. The Saturn tumblers are very simple in design, come stamped with the depth and do not include anti-pick serration.



4. All components, except tumblers, are included in the lock service package. Pictured here is the sidebar and sidebar springs, a unique part to the Huff supplied Saturn lock.



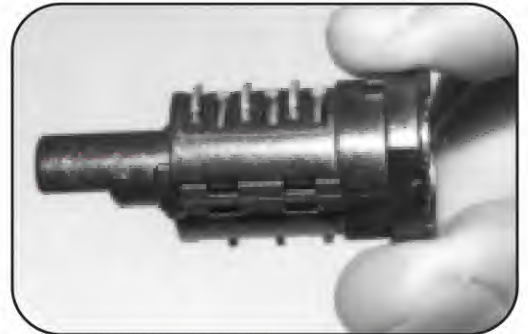
5. The springs placed in the spring pockets of the Saturn lock.

need to stake the sidebar into position (see Photograph 2).

More typical to this key system are the tumblers. Each tumbler is stamped with its corresponding depth and does not include the serrated, anti-pick edges typical of many wafer locks. Sidebar notches, appearing on the edge of each tumbler, align at the same position for all depths. The difference in each depth tumbler is the height of the tumbler land. A tumbler of this design is usually quite easy to read through the keyway.

The same tumblers and tumbler springs are used for all locks.

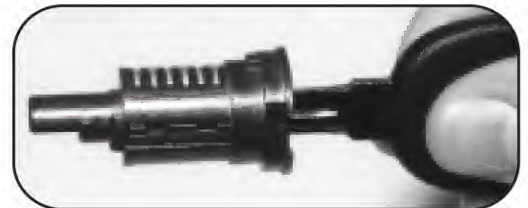
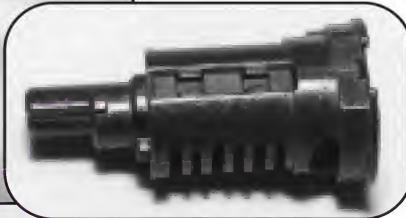
Like the locks, tumblers and tumbler springs are only available through a Saturn dealer (see Photograph 3).



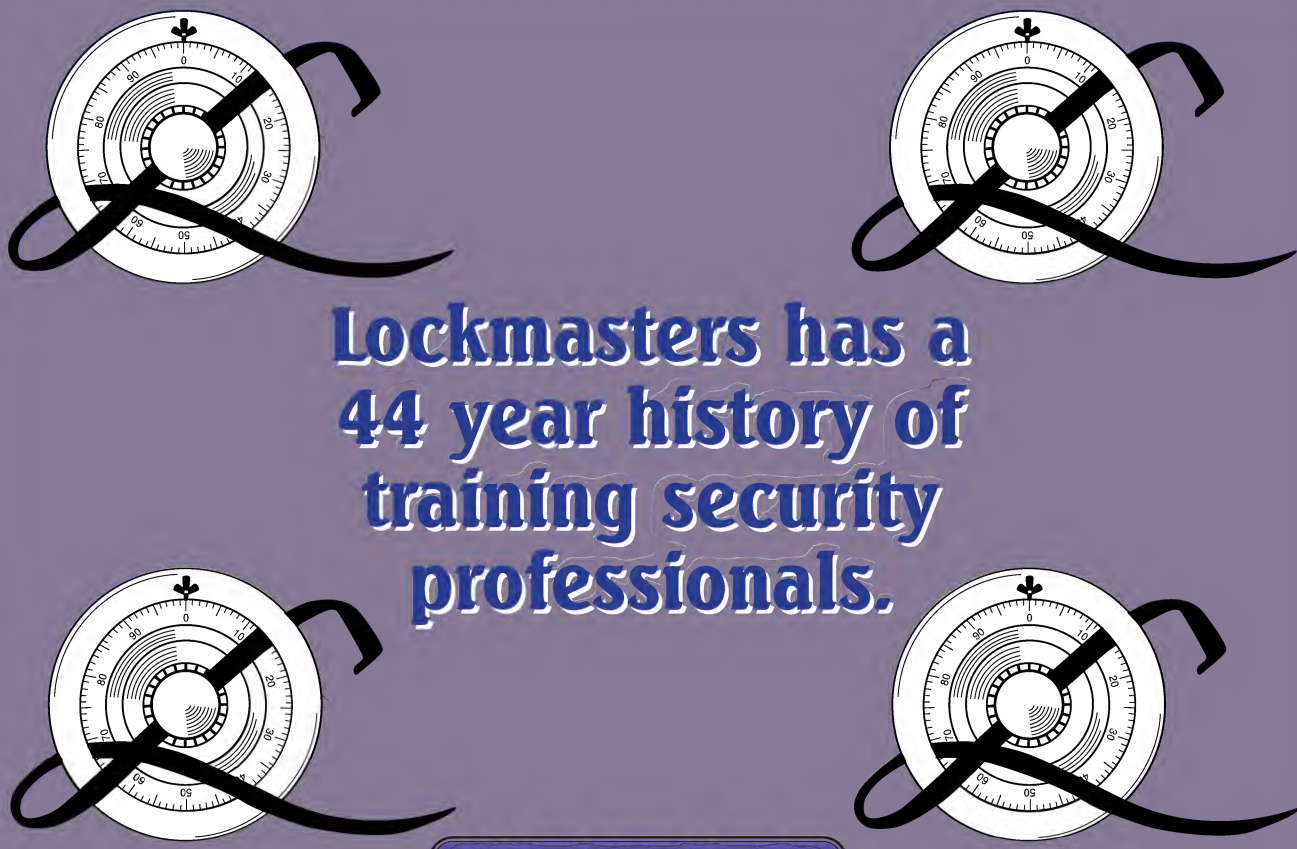
7. Inserting the tumblers can be a challenge unless a small mallet is used.



6. Insert the sidebar into the front of the plug until it is seated. The sidebar does not snap into place and can slide out of the plug until the tumblers are inserted. Also be careful not to lose the sidebar springs as they have a tendency to pop out of the sidebar.



8. Make sure to test the key before further assembling the lock.



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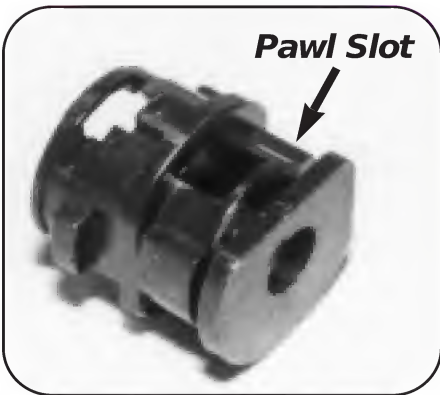
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9. Insert the dust cover springs into the plug front.



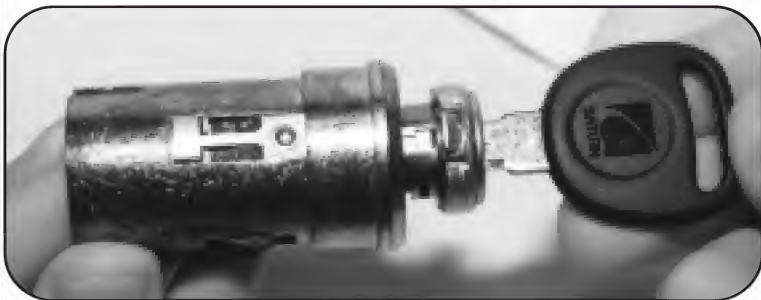
10. Next, place the dust cover on the plug.



11. This slot is used for the pawl. Make sure to include the pawl before assembling the rest of the lock.



12. The assembled door lock, less pawl.



13. The keyed ignition plug being inserted into the lock case.



14. Location of the retainer pocket.

The tumbler positions for these locks are very simple. The ignition uses all nine cuts of the key. The door and ignition locks use the last six cuts or cuts four through nine. Following are the lock assembly instructions for the ignition and door lock:

- Door Lock -

To begin keying the door lock, it is first necessary to assemble the sidebar. There are two springs and the sidebar included in each lock service package (see Photograph 4).

Carefully place the two springs into the two spring pockets (see Photograph 5).

After the springs are secure, carefully insert the sidebar into the sidebar pocket found



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15. Insert the retainer spring and retainer into the pocket.



16. Depress the retainer and turn the plug counterclockwise.

in the face of the lock plug. Insert from the front of the plug (see *Photograph 6*). Be careful not to lose the springs. The springs do come out very easily.



Next, read the key for the proper depths and insert the corresponding tumblers into the lock plug. The depths of the tumblers are stamped on the tumblers. The tumblers are quite hard to insert and I needed to tap them in with a small mallet (see *Photograph 7*).

Once all the tumblers are in plug, insert the key to make sure the tumblers and the sidebar line up with the shearline (see *Photograph 8*).



17. Align the lug on the lock case with the slot on the face-plate.



18. Snap the face-plate into place.



19. A complete Saturn lockset.

When finished with the tumblers, insert the dust cover springs into the spring pockets on the front of the plug (see photograph 9).

Next, snap dust cover into place. The dust cover only goes on one way and snaps into place (see Photograph 10).

Before placing the plug into the lock case, insert the pawl into the slot provided at the end of the lock case. In this particular article, a pawl was not available and the lock is assembled without it. Because the pawl is a part

of the lock assembly and not attached separately to the lock shaft, make sure to include it during assembly in the field (see Photograph 11).

Next, insert the plug into the lock case, going through the pawl. The plug can only go in one way. There is a lug on the plug that fits through a small broaching at the back of the lock case. When inserted and turned, the plug interlocks with the lock case.

Finally, snap the facecap into place (see Photograph 12). The deck lock is very similar to the door lock, just make sure you add the return spring and rubber boot.

— Ignition Lock —

To begin keying the ignition lock, you need to pin the plug which is identical to keying the door and deck lock. After pinning the plug, insert it into case. It only goes in one way (see Photograph 13).

Next you need to insert the retainer spring into retainer pocket located on the back of the lock (see Photograph 14).

Insert the retainer pin over the retainer spring (see Photograph 15).

Push down the retainer pin

with a screw driver until it is under the stop. Turn the lock counter clockwise to move the retainer into place (see Photograph 16).

When finished getting the retainer pin under the stop, place the face-plate on the lock case. There is a lug on the lock case that lines up with an adjoining slot on the face-plate (see Photograph 17).

Place the lock on a table and push until the cap snaps into place (see Photograph 18).

Photograph 19, shows a complete Saturn lock set. **TNL**

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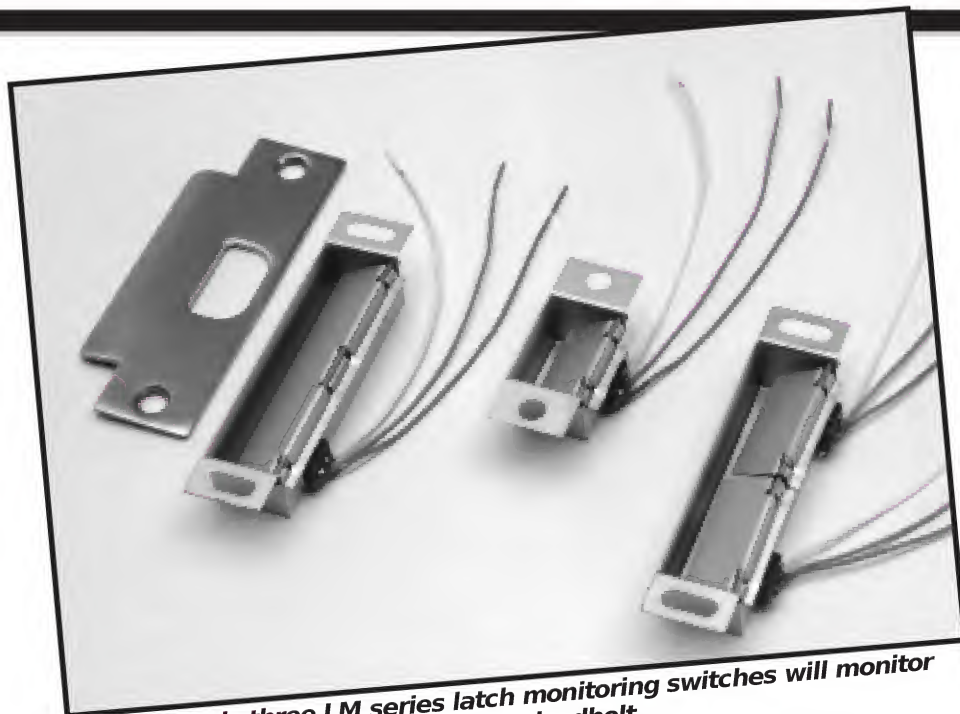
SECURITRON

DOOR

MONITORING

A common security fault in both residential and commercial applications is when a person does arm the alarm system, but fails to lock some of the doors.

by Robert Cook



1. One of only three LM series latch monitoring switches will monitor any normal North American latch or deadbolt.

Each year in the U.S., about twenty million sets of door contacts are sold. These, of course, connect to alarm systems to signal improper use of the door during periods when the alarm system is armed. While door contacts are an immensely successful product, they have some well known limitations.

Door contacts signal that the door is closed or nearly closed, but say nothing about whether it is secure. For a door to be secure, it must be locked via a bolt and/or latch. If an efficient way is devised to monitor the secure status of the door, two important benefits arise:

First, it can be assured that perimeter doors are secured when the alarm system is armed. Alarm systems will not arm unless all points are reporting "secure," but when conventional door contacts are used, this simply means that all the doors are closed.

A common security fault in both residential and commercial applications is when a person does arm the alarm system, but fails to lock some of the doors. Even though the alarm system goes off when the unlocked door is entered, the criminal has time to make off with valuables before the police can respond.



2. All 2-3/4" strikes accept the model LMS-1 regardless of the type of mechanical latch or deadbolt.



3. 4-7/8" strikes will accept the model LML-1 if you wish to monitor a single latch or deadbolt.

Monitoring the secure status of perimeter doors is most valuable when there are a number of such doors. The person who arms the system will exit through only one door, so the more additional perimeter doors in the building, the easier it is to overlook one. Latch/ bolt monitoring even helps on the door used to leave the building by the person who arms the alarm system. He has to lock that door, arm the system, and then unlock the door to go out.

The action of unlocking the door just prior to exiting is a strong reminder to relock it after exiting. If the door is not relocked after exiting, the alarm will sound before the person who armed the system has left the area. He can then re-enter the facility and attempt to cancel the alarm signal.

The second benefit of monitoring the secure status of doors is reduction of false alarms. The predominance of false alarms in our industry today has made police departments increasingly resistant to responding to alarms. Many cities are beginning to charge fees to alarm system owners either on a quarterly or on a per-dispatch basis. It is vital that false alarms be reduced to maintain the usefulness of alarm systems and monitoring the secure status of doors will play a part in this.

One cause of false alarms is when a person "innocently" opens a door which was supposed to be locked and was an armed alarm point. The person who is not a criminal, was not aware that the door was alarmed and is not able to cancel the alarm. This problem occurs particularly in commercial facilities with different internal alarmed partitions. An alarmed, but not secured door can even be opened by the wind in some cases. Use of latch/ bolt monitoring insures that all alarmed doors are secure and therefore are not subject to "innocent" opening.

Monitoring switches of this type have been available for a number of years from door hardware companies (the same companies that make the latches). They have not, however, been much used in the alarm industry. The units were difficult for alarm installers to employ, as they generally needed to be matched up with the specific brand of door latch/ bolt, and this required expertise in door hardware that doesn't widely exist in the alarm business.

Securitron's LM Series

Securitron has now developed a simple and universal family of latch monitoring switches called the LM series. One of only three models will monitor any normal North American latch or deadbolt (see Photograph 1). The units install quickly and easily with a screwdriver behind the existing strike (the strike is the stamped plate with a hole or two holes in it that mounts on the door frame. The latch and/ or bolt goes into the hole or holes in the strike). No mortising or routing is required except on some wooden door frames.

To select the correct model, you first have to understand that North American strikes come in two versions. The smaller unit is 2-3/4" in height and found on most residential doors. It can accept either a dead bolt or latch depending on the type of mechanical lock it is supplied with.

The larger unit is 4-7/8" in height and predominates on commercial doors. It can accept a latch or a latch and deadbolt. In the latter case, the strike has two holes in it.

All 2-3/4" strikes accept the model LMS-1 regardless of the type of mechanical latch or deadbolt that matches the strike (see Photograph 2). 4-7/8" strikes will accept the model LML-1 if you wish to monitor a single latch or deadbolt (see Photograph 3). For locks which include a latch and deadbolt, you can still use the LML-1 if you are content to receive a "secure" signal when either the latch or deadbolt are in the strike.

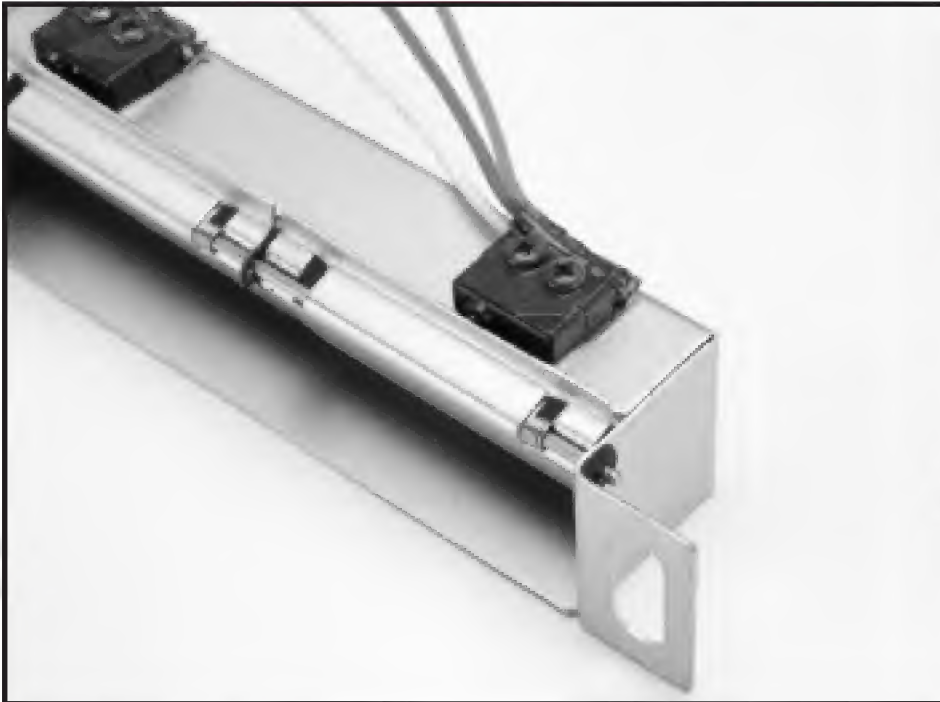
For more sophisticated monitoring, the LML-2 will separately monitor the latch and deadbolt associated with a 4-7/8" strike. The LML-2 is a double unit with two output switches (see Photograph 4). Another way to use the LML-2 would be in an application where you wanted to be sure the deadbolt was thrown, but you weren't interested in separately monitoring the latch. You would hook up only the switch on the LML-2 that monitored the deadbolt and leave the second switch unconnected.

How is Securitron's design able to cope with all the different latches and bolts on the market while previous designs could not? It is because the LM family employs a pivoting rocker plate that fills the entire strike opening. A latch entering the strike hole at any position and to any depth



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4. The LML-2 is a double unit with two output switches.

will deflect the plate and de-activate the switch. The "normal" position of the switch is activated, but as the plate is moved in from contact with the latch, the switch, which is located on

the outside of the rectangular housing, changes state through being activated.

A benefit of this approach is that rough use of the door is not able to

damage the switch because it is completely physically isolated from the latch/ bolt.

There are still certain specialty types of door locks and latches that the LM family will not monitor. These include Rim latches. A rim latch is often used with panic bars. The latch doesn't enter into a strike in the middle of the door frame, but rather the strike is surface mounted on the door frame. Rim latches are less secure and less attractive than normal latches, but make for easy retrofit of the panic bar or lock. A second common type of lock is the swingbolt used on storefront type aluminum frame glass doors. The bolt swings into a rectangular hole in the aluminum frame extrusion (there is no strike).

Securitron, however, is developing monitoring switches for both of those applications. It's goal is to make the monitoring of the secure status of doors available to alarm installers in simple and reliable packages that will work with any latch that can be found.

For more information on Securitron products, call: 1-800-MAG-LOCK. **TEL**

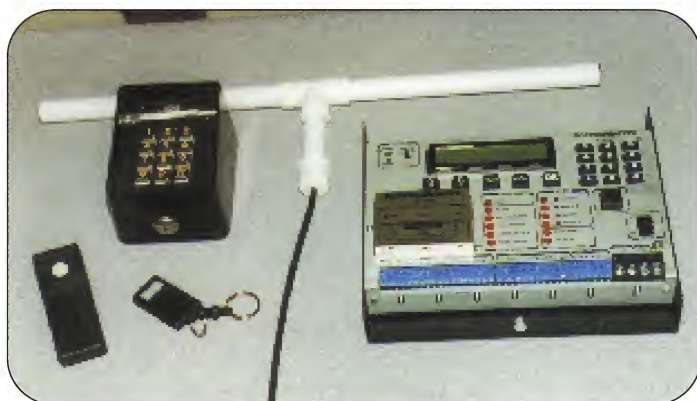


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1. The AMII controller, a weather-resistant keypad, a single button transmitter, a dual button transmitter, and a remote directional antenna.

Linear has successfully integrated advanced features found in high-priced systems — as well as a few unusual ones — into a reasonably priced, ready-to-install access control system. Shown in *Photograph 1*, is the AMII controller, a weather-resistant keypad, a single button transmitter, a dual button transmitter, and a remote directional antenna.

Features

Inputs can be received from card readers — both proximity and swipe style — from keypads, or from radio frequency (RF) transmitters. Output is controlled through four relay channels. Each channel can be programmed to release an electric strike, magnetic lock, or gate operator. Channels C & D can also operate as an alarm shunt, alarm relay, a gate obstacle relay, or CCTV relay. It can also receive door ajar and REX inputs.

The AMII has full RS-232 support as well. This can be used for real-time reporting to a printer, direct connection to a PC, or modem connection to a remote PC. Additionally, up to 8 AMII controllers can be networked together to accommodate larger systems. Not only can these networked controllers share programming, they can also share stored memory.

Another unique feature of the AMII is the ability to tie into existing access control systems. A 3-wire connection allows output to Sentex30, SecuraKey31, and Wiegand26 format systems. The AMII simulates a card reader input to the remote panel.

System programming is accomplished either with the built-in keypad or by connection to a PC. Even without PC connection, programming is straight-forward and easily accomplished by following the prompts on the built-in LCD screen. If you choose to use a PC for programming, no special software is required, any standard terminal program will suffice.

The AMII is available with 4 different memory expansion modules — small, medium, large, and jumbo. They range from 16k to 256k. The larger the memory capacity, the larger the system can be. Also, with larger modules, names can be assigned to each user or transmitter. The memory module simply plugs into the port on the controller and is held in place with 2 screws.

The installation and programming manual is logically laid out and easy to follow. It leads you from system concepts, into system design, layout, and on to installation and programming. I feel confident that most technicians should be able to easily design, install, and program this system with a minimum of difficulties, assuming they take the time to study the manual.

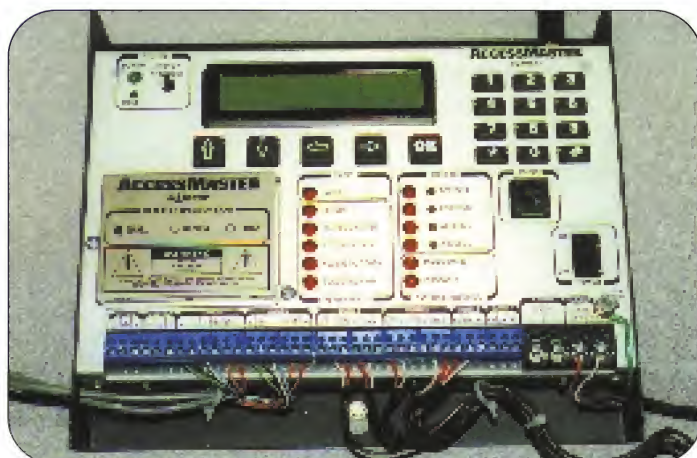
Wire Connections

Photograph 2, shows a fully wired AMII system. To show how simple and basic the system wiring is, let's look at what each connection does.

Access Master II by Linear



by Steve Gebbia



2. A fully wired AMII system.

Each remote device, whether keypad, card reader, or RF receiver, uses a 6 conductor connection to the AMII. Home run wiring is recommended, but not required. Both

the external device and the AMII are clearly labeled with wiring symbols to simplify wiring.

From left to right, the terminals on the AMII are for the following

connections:
NETWORK;
ACCESS OUT;
KEYPAD IN;
READER IN;
RELAY CHANNEL A; RELAY CHANNEL B;
RELAY CHANNEL C; RELAY CHANNEL D; DC POWER IN; & AC POWER IN.

The terminals in use in this system are: KEYPAD IN; READER IN; RELAY CHANNEL A; RELAY CHANNEL B; RELAY CHANNEL C; & AC POWER IN. Each of these are described and shown in detail in the accompanying diagrams.

A 6-conductor cable is used to connect the keypad to the KEYPAD IN terminals on the

AMII. This is the first group of 6 wires from the left as seen in *Photograph 2. Illustration A*, is taken from the installation manual and shows these connections in closer detail.

The next group of connections is for READER IN connections. This can be used for connection to a proximity reader, a reader interface that controls up to 2 swipe readers, or connection to a remote radio receiver (see *Illustration B*).

Shown in *Photograph 3*, is the device address selector. This rotary selector is located on the circuit board of each input device. Each remote device must have a separate device address selected.

RF Input

Four different antennas can hook directly to the AMII via COAX cable. A small wand antenna (for small, local systems), an omni-directional remote antenna, or a remote directional antenna shown in *Photograph 1*. All use the COAX connector located at the upper right of the AMII controller.

A separate remote RF receiver can be used to extend the range of the radio input. In addition to the COAX connection, this receiver also connects to the READER IN terminals on the AMII.

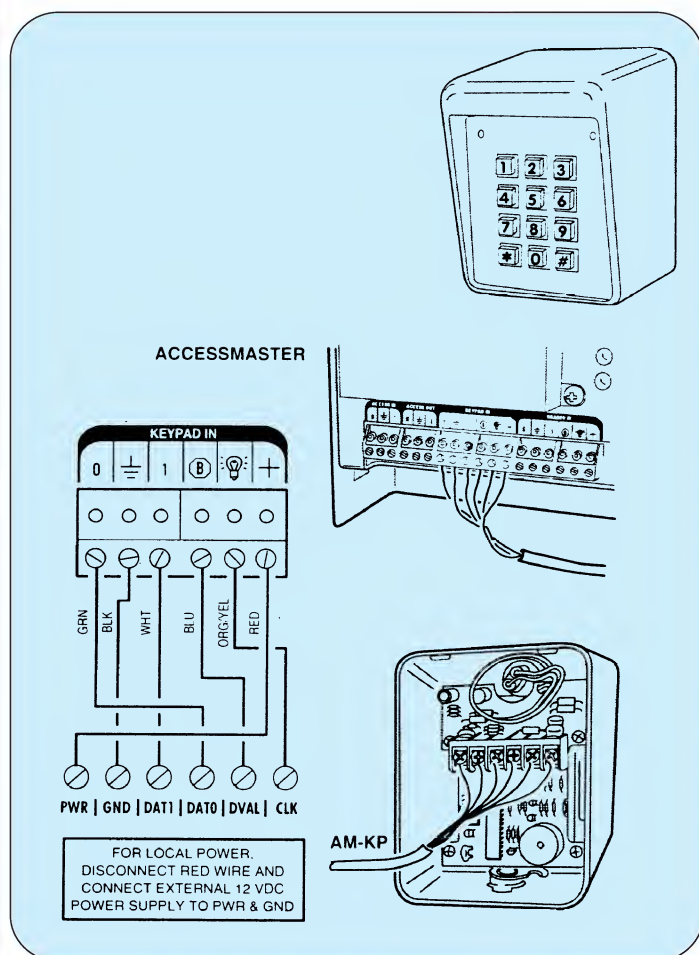
Relay Channels A & B have several different functions depending on how they are wired. They are primarily used for release of external devices, but can also act as inputs from door sensors. Channel A is being used for door ajar input and for release of an electric strike. *Illustration C*, shows the door ajar connections, while *Illustration D*, shows the connections for the electric strike.

The 4 relay channels are dry contacts, so any external device such as an electric strike or maglock must provide its own power source.

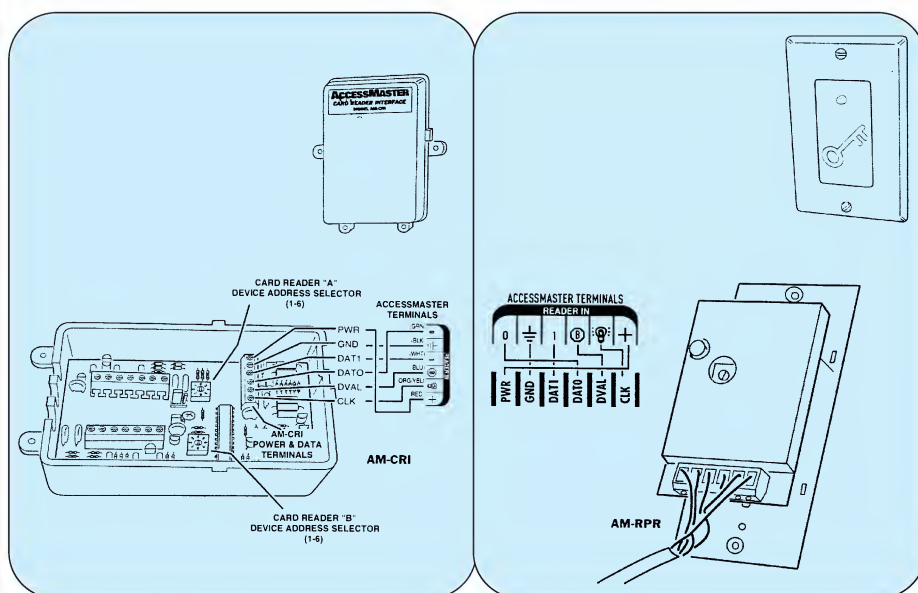
Channel B is being used for REX input and for activation of a maglock (see *Illustration E*).

Relay Channels C & D are used primarily for shunting operations. Channel C is wired as an alarm shunt (see *Illustration F*).

Other options available from Channel C & D include an alarm relay hookup which can operate either a separate local sounder, or activate the forced door loop of a separate alarm system.



A. A sample of the installation manual showing the connections in closer detail.



B. A proximity reader, a reader interface that controls up to 2 swipe readers, or connection to a remote radio receiver can be used.

Upon signal from a gate-edge safety sensor or overhead door obstacle sensor, these channels can act as an obstacle relay and reverse operation of the gate or door to prevent damage to the gate, door, or vehicles.

When the AMII is installed along with an AE-1 telephone entry module, channel C or D can act as a CCTV relay. Once telephone connection is made to a directory party, they can activate the CCTV relay by pressing the "5" on their telephone. This allows video of the entry area to be sent to their unit so they can see who is requesting entry.

Power In

Either AC or DC power may be used for this system. The AMII will accept input of 12-35 VDC or 14-24 VAC. The system shown is using a plug-in style 16VAC, 20VA transformer.

Other Options

Up to 8 AMII's can be networked together to expand the system. *Illustration G*, shows how easy this is to accomplish. Networking allows all units to share a common event



3. The device address selector. This rotary selector is located on the circuit board.

log and other programming information.

Through use of the ACCESS OUT terminals, the AMII can be connected to other manufacturer's access control systems. The primary

advantage of this is to allow RF inputs to activate systems that normally cannot accept radio input. A 3-conductor cable is used to connect the AMII to the Reader Inputs of selected systems. Once connected, a few simple programming steps are

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required to configure the output to match the external system panel.

Programming the System

The size of the system, options selected, and number of input devices used will affect the length of the programming procedure. No matter how large the system is, the steps are the same. To simplify programming, a worksheet is included that helps you select system and programming options. Programming will progress much smoother if this worksheet is used.

Displays

The first time the system is turned on, the system will perform diagnostic checks. This confirms proper operation of the system. This takes about 5 seconds to complete. During this time, the display confirms system Startup and Version number of the internal Firmware. Once completed, the display will indicate "All startup tests passed."

An internal "watchdog" circuit constantly monitors operation of the controller. If for any reason — voltage spikes, lightening, etc. — this circuit will reset the system protecting it from major damage and restoring system integrity.

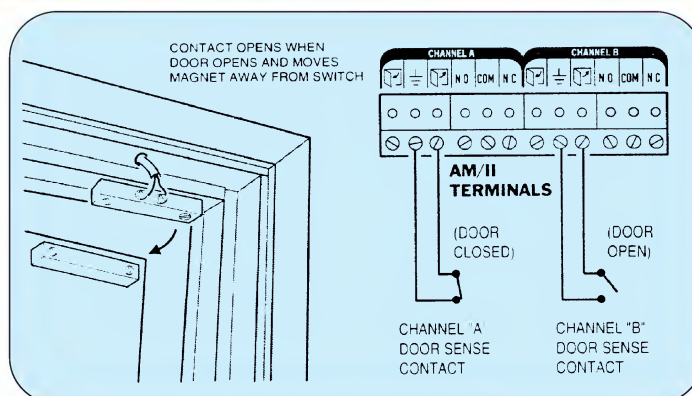
The AMII is continually informing you of system activity via its LCD display. *Photograph 4*, shows the display after activation of a radio transmitter. It may look like garbage at first, but it all makes sense.

The first field of information indicates the type of activation. In this

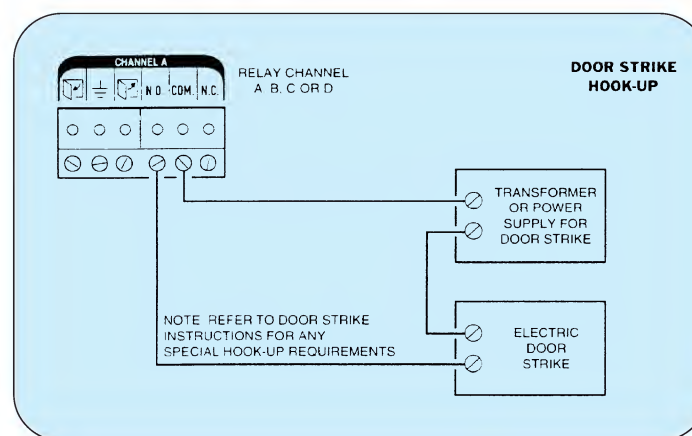
case it is a single transmitter: "sTx." All transmitters are factory encoded either as single transmitters or in blocks of sequential serial numbers (similar to encoding of access cards). Transmitters can be assigned "User" numbers which would appear in place of the "x" in the display (sT1, sT2, sT3, etc.). A block coded transmitter would appear in the display as: "bTx."

Other indications in this field are: "OB1" & "OB2" for Obstacle transmitters 1 & 2, "KpadX" for remote keypads (the X indicates the device number), "CardX" for remote card reader (the X indicates the device number), "RadoX" for remote radio receiver (the X indicates the device number).

The final indication seen here is "MW1" — "MW8." This is for Magic Wand transmitters 1-8. This is a



C. The door ajar connections.



D. The connections for the electric strike.

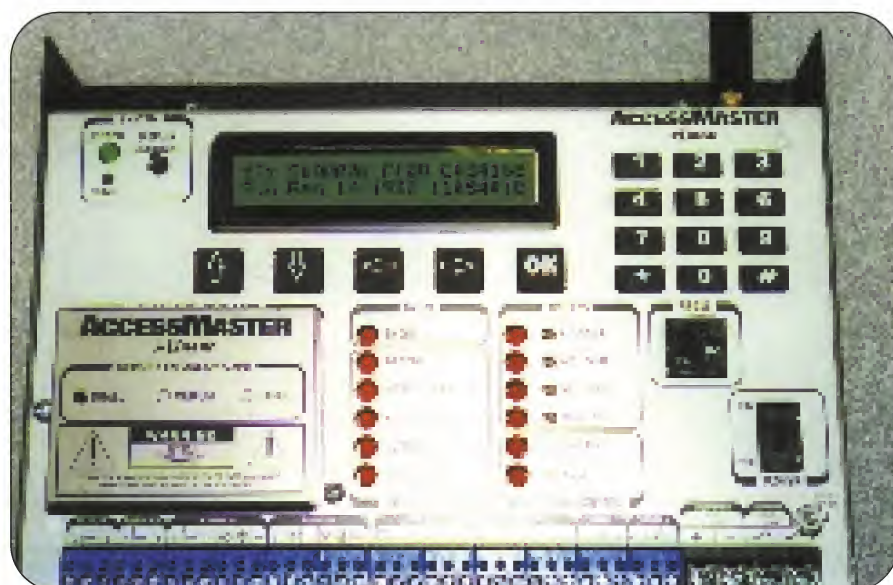
special function of the 5 button transmitters. Magic Wand function will allow selected transmitters to turn certain remote devices off to allow safe service of these devices. This can be done from the remote location without having to disconnect them from the rest of the system.

The second field of info contains the Sequence number. For all practical purposes, this can be considered to be the transmitter's factory-assigned serial number. In the example, this is seen as "S:00001."

The next field contains the Facility code. This is only relevant for block-coded transmitters or block-coded cards. All cards or transmitters in a group will have the same facility code.

The final field contains the Media code. This is essentially the numeric equivalent of the internal code programmed into the transmitters, the entry code (keypads), or the card code number.

The second line of the display will show the current Date and Time.



4. The display after activation of a radio transmitter.

Continued from page 38

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Programming the System

Certain steps must be completed before others, so it's best to follow the programming outline in the system manual. This will guide you through programming and ensure that programming is done properly and completely. For some systems, only a few steps will be used. For others, most of these steps will be used. This will depend entirely on how many types of input devices are used and the system options selected.

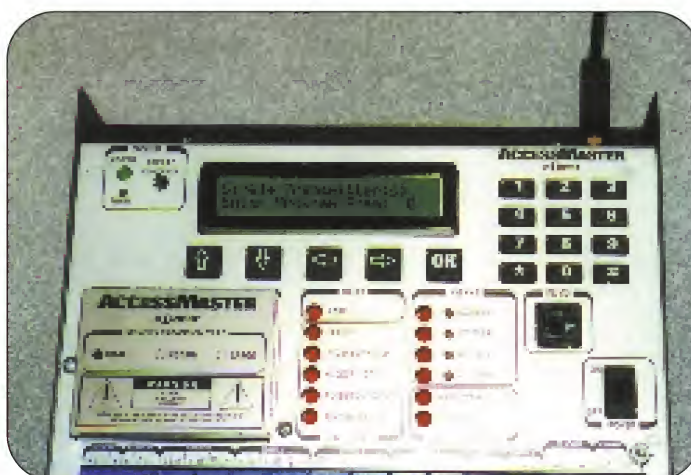
The following list is the programming outline required for the sample system:

1. Fill out programming worksheet.
2. Enter program mode by pressing * key on AMII for 5 seconds.
3. Set Date & Time — Program Area 20.
4. Set system Options - Area 22 (assign System name, size of event log, length of anti-

passback time, keypad strikeouts, door ajar time, & local password).

5. Program Single transmitters — Area 01.
6. Program Keypad Entry codes — Area 05.
7. Set Relay Options — Area 21 (assigns each channel a name, and assigns type of operation, contact action and timing. Also selects which time zone will activate which relay).
8. Configure remote devices — Area 25 (sets the remote device numbers for each device connected to the AMII. Also assigns a relay channel to each device).
9. Test System.

Certain options on this system were left at their default settings which simplifies programming. Some of the options not used include: Time Zones, Validation Groups (groups of users), Door Schedules (selects which relay channel is released by which door schedule).



5. Program single transmitters.

The setup procedure for each program area is very similar. Below is the procedure to program Single Transmitters.

Program Single Transmitters (see Photograph 5): (use the AMII keypad for all entries).

Enter program mode — (press and hold "*" for 5 seconds).

At the prompt, enter programming password (see Photograph 6).

Use the UP and DOWN arrows to scroll to "Learn Single Xmtr(s)," press OK.

Use the LEFT and RIGHT arrows to select a validation group, press OK when desired group is flashing.



6. At the prompt, enter programming password.

Enter the transmitter number and activate the transmitter.

For additional transmitters, use the UP / DOWN arrows to select the next transmitter ID # and continue as above.

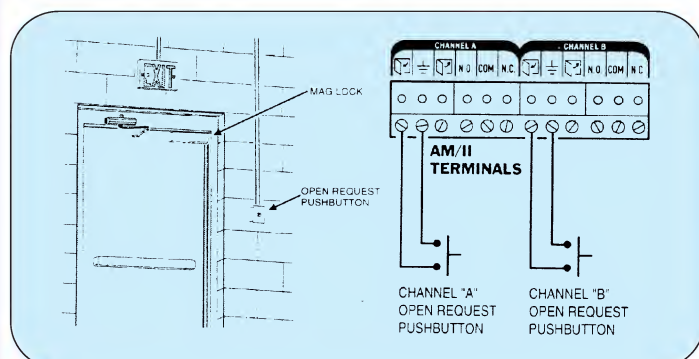
If using the medium, large or jumbo memory module, you can assign each transmitter a name: scroll down to "Enter Single Xmtr Numb" and press OK, enter transmitter name and press OK.

When finished, press "*" to return to main program menu.

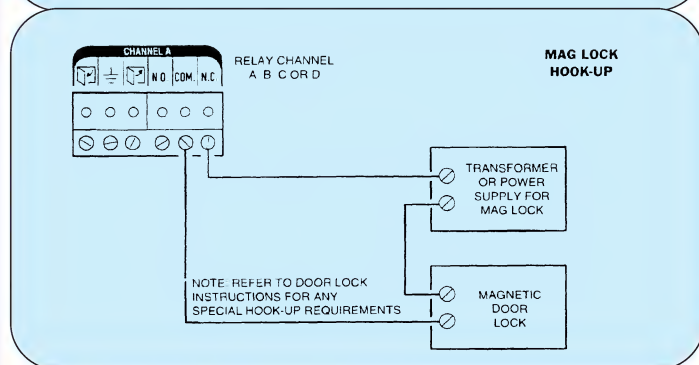
All other program operations use similar steps, scroll to the desired selection and

enter OK. Complete menu trees are included in the manual, along with step by step instructions to guide you through your selections.

A few things must be kept in mind when installing this system. The controller must be in a secure location. While the password will prevent unauthorized program changes, there are 2 possible security breaks. The first is that there are buttons to activate the relays on the controller. No password is required to use these. Simply press the release button and the relay is tripped until the button is pressed again. The other



E. Channel B is used for activation of a maglock.

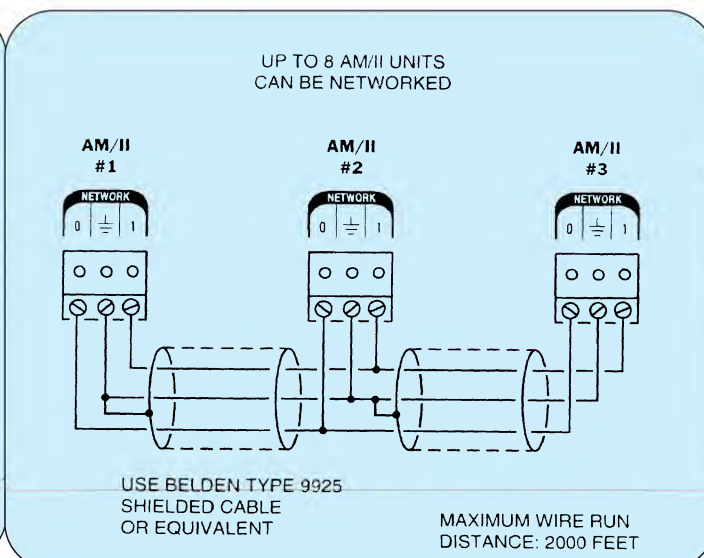
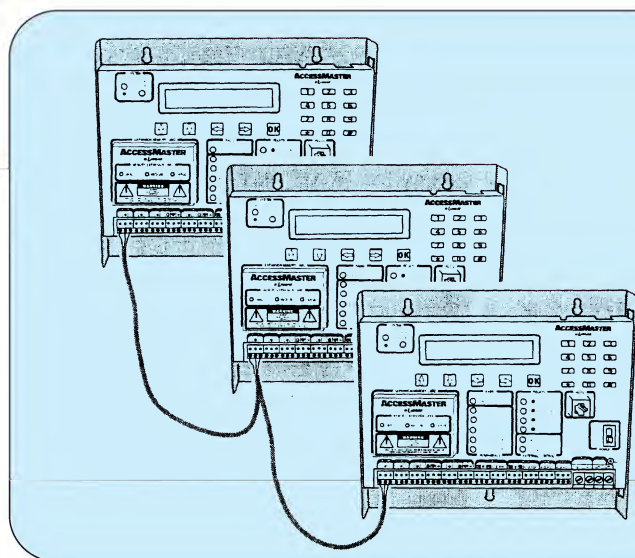


F. Channel C is wired as an alarm shunt.



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G. Up to 8 AM/II's can be networked together to expand the system.

problem is that the entry code is displayed on the screen and remains until the next code is entered. An unauthorized person with access to the panel could easily obtain these codes. To prevent this, the controller should always be sealed inside a locked enclosure.

This system will work for the

majority of installations you will encounter — whether one door or many. While some of the terminology may be new to you, a review of the manual will explain all.

The Access Master II is surprising complete for its size and cost. Unexpected options constantly pop up, like the down light on the keypad

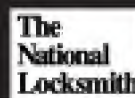
that can be programmed to operate continually or only during certain hours. It's this type of attention to detail that runs through every option of this system.

For more information, contact your access control supplier or Linear at (619) 438-7000. **TRL**



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BEGINNER'S CORNER

Locksmith Tools



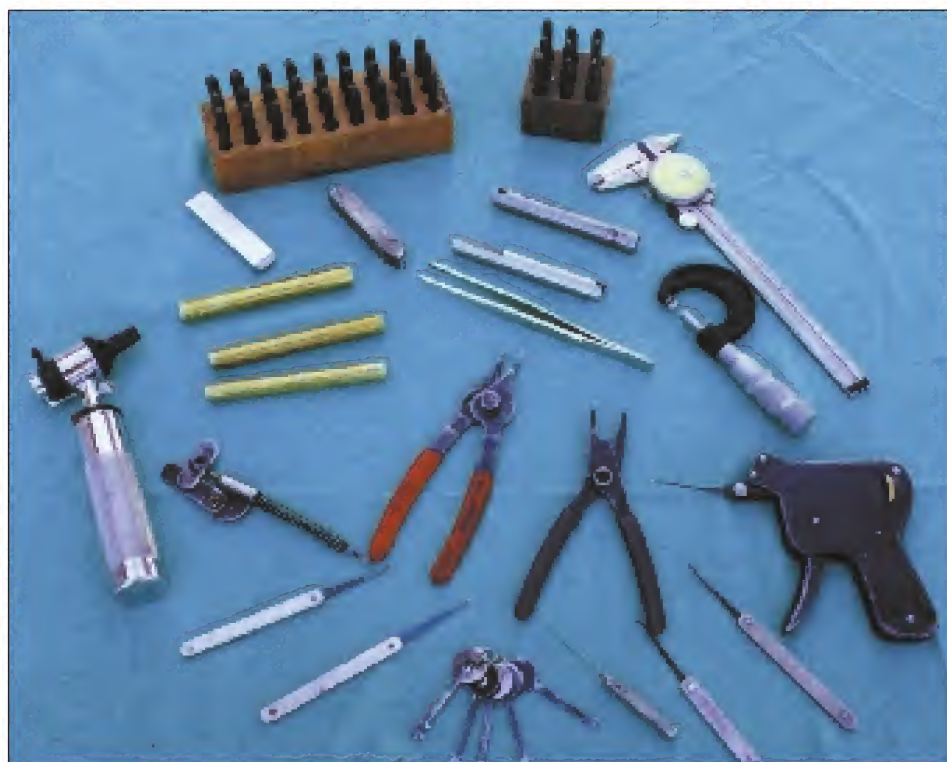
by
**Jim
Langston**

As a beginning locksmith, you need to know which are the common tools needed to perform basic locksmithing. Having the proper tools does make life a whole lot easier. Having the proper tools can also greatly reduce the amount of time you spend on a job, and can mean the difference between failure and success. There is nothing more frustrating than not being able to complete a job for a customer because you didn't have the proper tool(s).

You may be surprised at the number of tools that you need for every day operation. In this article, we will be covering some of the basic tools needed to start locksmithing. The list given is not necessarily in order of priority.

To start with, you will need key blanks. That may seem obvious, but key blanks — and the larger the variety the better — are one of the most basic components to this trade. Keyblanks are something you can't have too many of. One of the biggest stumbling blocks most beginning locksmiths will encounter is not having the correct keyblank for the job. The locksmith who stocks just about every keyblank a customer could possibly want, is a locksmith who will be busy.

I know of some locksmith businesses that will easily cut 200 keys a day, and that's on the conservative side. They are doing that



1. Plug followers, picks, stamps, Tru-arc pliers, plug spinner, inspection light, tweezers, key extractors and micrometer/calipers are just a few of the tools every locksmith needs.

type of volume because they have a good stock of key blanks and a wide variety to choose from.

"Plug Followers" in a variety of sizes are also needed. Plug Followers are available in different materials such as: plastic, brass and steel, and come in various sizes. The three standard and most common sizes are: small, measuring 0.395 degrees in diameter; medium, measuring 0.495 degrees in diameter, and large, measuring 0.550. You can purchase Plug Followers (or what some call Plug Pushers) from a number of different suppliers, or you can make your own. They are quite simple to make, but are also inexpensive to purchase.

"Pin Tweezers" for loading pins in cylinders and extracting tangled springs will also come in handy. I recommend purchasing not only pin tweezers, but also a quality fine point

tweezers as well, for removing those nasty brass splinters you are sure to get.

"Tru-arc Ring Pliers" are also very important. You will use them all the time. I use a pair of reversible Tru-arc pliers which will squeeze clips together as well as pull them apart. I recommend having a set that will do the same.

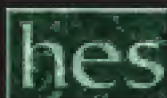
"Picks" and a "Plug Spinner." The need for picks is obvious. The plug spinner is used when you pick a lock in the wrong direction and you want to spin it back in the other direction. You wind

it and it spins the lock in the other direction. There are several types on the market.

I also recommend having a "Tubular Pick." You will not use a tubular pick as often as standard picks, but when you need one, a standard pick just won't do.

A variety of "Key Extractors" to remove broken keys from the locks will also be needed. This is a simple tool that you will use often.

A good "Pin Kit" to pin locks with is a staple in every locksmith business. There are various kits available which come in number different sizes. Pin kits are available in either a .3000 increment or a .5000 increment, and you are sure to find one that best fits your needs. As you grow, so will the number and variety of pin kits you have grow.



"Shims" for shimming a lock when no key is available is very important. I would suggest that you always keep a good supply on hand. There's nothing worse than working with a used, bent, crinkled shim because you don't have any new ones left. We've all been there and it isn't fun.

Next, you will need a good "Key Machine." There are several good machines available to choose from. I prefer a key machine with reversible jaws. You will need these reversible jaws to grip the variety of different types of keys properly. There are several applications for reversible jaws. I would also suggest you purchase a tubular key machine. This is a machine that you may or may not use much, but when you need one, there is no substitute.

A "Code Machine" to cut your keys by code is a machine every locksmith should have. I have known several locksmiths who operated for several years without a code machine, and I don't know how they did it. A good code machine is a very versatile tool that you will never regret owning.

"Hand Files" are always needed. When you purchase files, get good



2. A complete pin kit is a staple in every business.

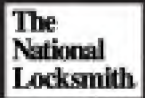
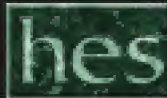
quality files. There is a huge difference between a good quality file and one made in China. Don't waste you money on cheap files, you won't be satisfied.

A "Bench Grinder" is vitally important. A bench grinder will do what a hand file just can't, and do it much quicker. You will find that you will use a bench grinder much more



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often than you would think.

A "Bench Vise" is very important to have. You will always use a bench vise to hold cylinders, locks, plates, you name it. A bench vise is critical in a service vehicle or shop.

A good "Drill, Drill Bits and Hole Saws." Once again, purchase a quality drill, drill bits and hole saws. Do not try an skimp on quality just to save a buck or two when it comes to such products. A good drill will operate much longer and endure much more abuse, and good drill bits and hole saws will last longer, cut much cleaner, faster and easier.

"Car Opening Tools and Manuals" are a must, especially when you are starting out, because much of your early work is likely to be opening cars. There are several car tool manufacturers to choose from, so I recommend attending a trade show so you can compare one to another. The same is true for car opening manuals. There are several to choose from, so examine as many as you can.

Not counting general hand tools, these are some of the most basic necessities you will need. A more complete list follows.

Basic Locksmith Tools That You Need:

1. Key files (warded, round, & pippin)
2. File handles

3. Plug followers (0.395, 0.495, 0.500, & 0.550 diameters)
4. Shims
5. Pin tweezers
6. Cylinder cap remover
7. Pin tray
8. Tru-arc ring pliers
9. Broken key extractor
10. Plug holder
11. Key micrometer or dial caliper
12. Professional lock picking sets
13. Tubular lock pick
14. Lock picking gun (optional)
15. Warded padlock picks
16. Key decoder
17. Cylinder removal tool
18. Wooden strike locator
19. Plug spinner
20. Duplicator key machine
21. Code cutter key machine
22. Tubular key machine
23. Metal punch and die set
24. One-way screw remover
25. Key Blanks

Common Hand, Bench, and Power Tools Needed:

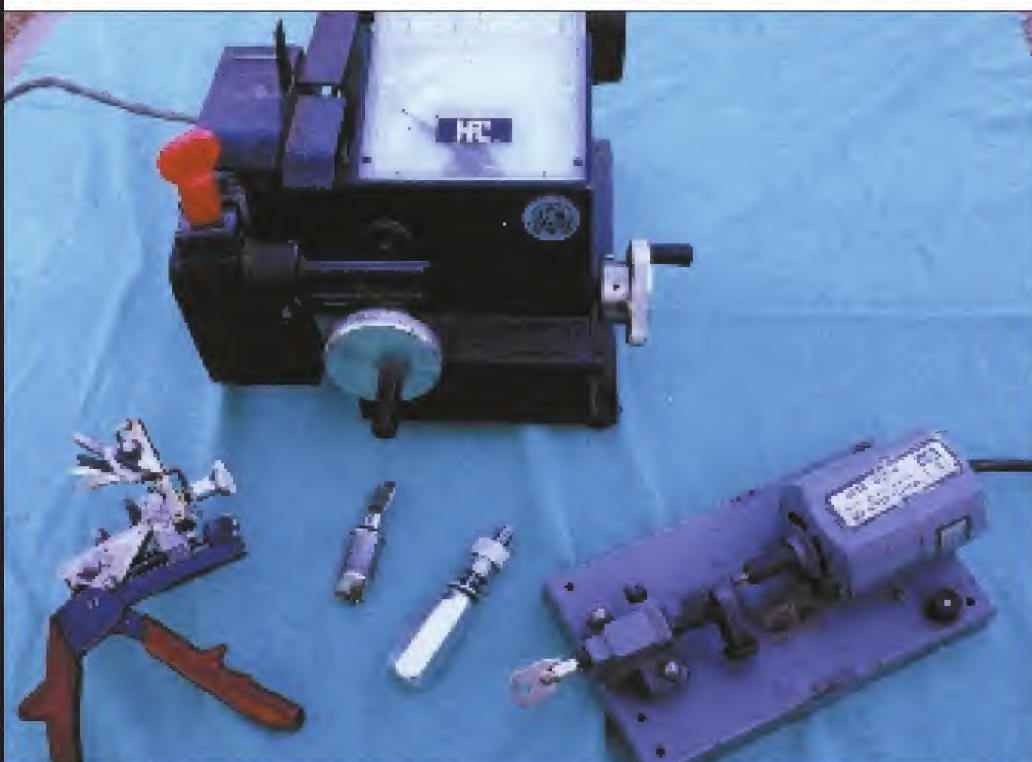
1. 16-oz. claw hammer
2. Nut drivers — assorted sizes
3. Hex and Torx drivers
4. Screwdrivers — flat & Phillips in assorted sizes
5. Vise grips — straight & curved jaw, small & large
6. Pliers — combination & needle-nose
7. Wrenches — crescent, pipe, adjustable, & open-end

8. Center punches and/or cold chisels
9. Allen wrenches — standard & metric
10. Hacksaw
11. Rubber mallet
12. Speed bits for metal & wood
13. Tap set — assorted sizes
14. Drill bits - assorted sizes
15. Hole saws — 1/2-inch, 1-inch, 1-1/4-inch, 2-1/8-inch
16. Awl
17. Tweezers
18. Metal-cutting files — assorted sizes
19. Wood chisels — 1-inch, 1/2-inch, 1/4-inch
20. Retaining ring pliers with changeable tips or good Tru-arc pliers
21. Flashlights & penlights
22. Extension cord
23. Tape measure
24. Bench vise
25. Drills — both electric & cordless
26. Bolt cutters — 18-inch to 24-inch
27. Wire cutters & strippers
28. Staple gun
29. Various assortment of lubricating sprays & cleaners
30. Flashlight
31. Bench Vise

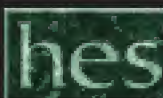
Automobile Tools You Will Need:

1. Car opening set — There are several different ones available.
2. Door handle clip removing tool
3. General Motors lock decoder to decode the wafers in the lock
4. Door panel clip removing tool
5. Bazel nut wrench
6. Face-cap pliers
7. Clippers — hand punch or Curtis or depth keys
8. General Motors lock block tool
9. Lock plate compressor for tilt and telescoping locks
10. Flexible shaft probe light
11. Glove compartment plug removal tool
12. Dust cover tools
13. Steering wheel pullers
14. Auto lock pinning kits — both domestic & foreign
15. Impressioning plates
16. Wedge
17. Inspection light

Last but not least, you will need code books. There are several different sources for code books. They are available from your suppliers, and in this day of computers, there are several

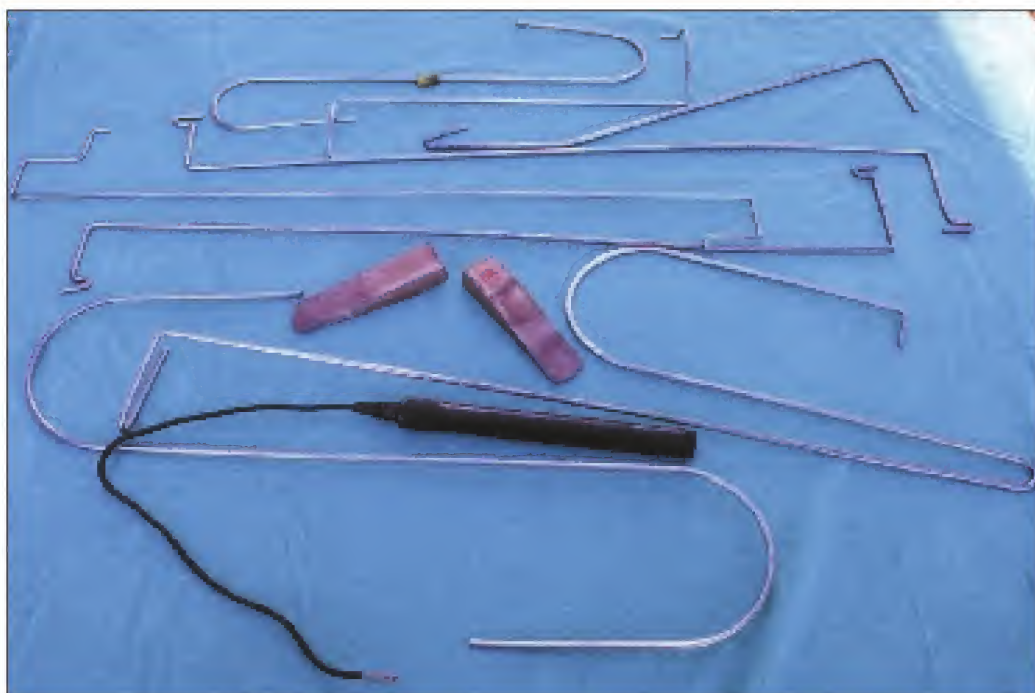


3. A good code machine, tubular key machine and clipper is irreplaceable.



programs of codes on disk available, from master keying lists, to key blank cross references, to codes and so on. Personally, after getting codes and locksmith programs on computer, I find that it makes things a lot easier. You can also get bookkeeping programs to keep your books straight for the IRS.

We have covered most of the tools you will need to start your own locksmith shop. There are also various technical manuals available. Although most cannot run out and buy everything, I suggest buying the manuals for the work you will be doing the most. There are literally hundreds of technical manuals available to the locksmithing industry on all kinds of general and specialized subjects, such as automobile servicing for both foreign and domestic, safe lock servicing, lock picking, high security product applications, master keying, and almost any locksmith topic that you will need. I highly recommend that if you are needing assistance, check with your locksmith supplier, they can be a great source of information and help.



4. Car opening tools and wedges come in a variety of shapes and sizes. Choose the one that best suits your needs.

This is only a brief list of tools you will need to perform locksmith service. These are the very basic needs. As you grow and expand so will the tool requirements. Lets see, there's Safe equipment and tools,

Safe Deposit tools, Electrical supplies, etc., etc. Good luck.

Point to Ponder: Are the footprints you leave worth following?

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Reed Report

While scattershooting for Caroline Reed, I didn't have to look too far. I simply woke up the next morning, and there she was, right next to me.

Caroline has been working for the past few months for the Pensacola Children's Chorus, but I am happy to report she is now with Security Resources and sits right next to me in my office. Welcome back, Caroline.

Q. Could you please tell me which vehicles are equipped with transponders and V.A.T.S?

A. Following is a chart which you might find useful.

5 Cut V.A.T.S. "S"; 10 Cut PASS "D"
Discontinued Model "—"; Transponder "T"

Model	86	87	88	89	90	91	92	93	94	95	96	97
BUICK												
Century										D		
Electra				S	—	—	—	—	—	—	—	—
LeSabre					S	S	S	S	S	S	S	S
Park Avenue				S	S	S	S	S	S	S	S	S
Reatta			S	S	S							
Regal								S	S	S	D	
Riviera			S	S	S	S	S	D	D	D	D	
Roadmaster								S	S	S		
CADILLAC												
Allante			S	S	S	S	S					
Brougham		S	S	S	S	S	S	S	S	S	S	S
El Dorado		S	S	S	S	S	S	S	S	S	S	S
DeVille/Concur		S	S	S	S	S	S	S	S	S	S	S
Fleetwood				S	S	S	S	S	S	S	S	S
Seville		S	S	S	S	S	S	S	S	S	S	S
CHEVROLET												
Camaro & Z28		S	S	S	S	S	S	S	S	S	S	D
Caprice											S	
Cavalier											D	



Yours For Better Security,

Bill Reed

Bill Reed

Scatter Shooting while wondering whatever happened to . . . April Truit

Model	86	87	88	89	90	91	92	93	94	95	96	97
Corvette	S	S	S	S	S	S	S	S	S	S	S	D
Lumina									S	S	S	S
Monte Carlo									S	S	S	S
OLDSMOBILE												
Achieva											D	
Aurora											D	D
Cutlass									S	S	S	S
LSS											S	
Toronado					S	S	S	—	—	—	—	—
88							S	S	S	S	S	S
98						S	S	S	S	S	S	
PONTIAC												
Bonneville							S	S	S	S	S	S
Firebird				S	S	S	S	S	S	S	S	S
Firebird GTA				S	—	—	—	—	—	—	—	—
Grand Am											D	
Grand Prix										S	S	S
Sunfire												D
Trans Am			?	?	?	?	?	?	?	S	S	
FORD												
Mustang												
Cobra & GT											T	
Sable											T	
Taurus											T	

This information was taken from the book titled "Vehicle Key Identification Guide."

TRL

If you'd like to attend a Bill Reed seminar, choose from the following. For more info, contact Bill directly at (904) 476-2799.

Seminar dates for the first half of '97:

May 3	Manchester, NH	June 21	Billings, MT
May 17	Casper, WY	June 28	Ft. Walton Beach, FL
June 7	Colorado Springs, CO	July 26	Dallas, TX



**COVER
STORY!**

**PASS KEY II, PASS KEY III,
PASS Lock and P.A.T.S.**

The **NEXT** **GENERATION** of **AUTOMOTIVE** **SECURITY**



by Tom Mazzone

Progress is steadily moving through today's automotive market at such a rapid pace, that today's locksmith can easily be left behind if constant attention to detail and change is not high on his/ her priority list. And being left behind can lead to expensive mistakes and unsatisfied customers. Both are unwanted situations that can become real life nightmares.

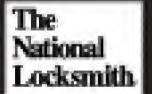
With the introduction to onboard vehicle theft deterrents, the industry has not only become a contender in the fight against automotive theft, but it has left the locksmith vast opportunities in the business world. The locksmith who chooses not to purchase updated equipment, service manuals and bulletins, and upkeep his training, will simply have to make a decision whether to stay in automotive locksmithing or specialize in other aspects of the trade.

This article is going to discuss several of today's automotive high technology, factory installed vehicle theft deterrent systems found on General Motors and Ford vehicles. While we will not delve deeply into all aspects of service procedures, the purpose of the article will be to introduce you to the operation and function of each of the systems.

The four different security systems that will be discussed are: PASS KEY II, PASS LOCK or MRD, PASS KEY III or PKIII and Ford's P.A.T.S. system.

The first system discussed will be the PASS Key II system. P.A.S.S. is an acronym for Personal Access Security System. This was first introduced in 1986 on the Chevrolet Corvette. It was originally called V.A.T.S., or Vehicle Anti Theft System. It remained exclusive to the Corvette until 1988 when a small number of Pontiac Firebird GTA's that were equipped with Corvette engines were introduced. Cadillac then picked up this system and introduced the new acronym, PASS KEY II, in 1989. Chevrolet Camaro and Pontiac Firebird's were also equipped with P.A.S.S. for 1989 with more models following suit as each year passed.

When first introduced, The V.A.T.S./ P.A.S.S. ignition key was a single sided ignition key with an embedded resistor pellet built into the upper portion of the blade of the key. The



1. The PASS KEY, the ignition lock cylinder, the PASS KEY decoder module, and the starter enable relay.

milling of the key was restricted to an "A" keyway only, and remains that way to this day with respect to all single sided P.A.S.S. systems.

On first inception, there were fifteen possible resistor values that could possibly operate a specific vehicle. Only after using proper equipment and a specific time out sequence between attempts could a V.A.T.S./ P.A.S.S. key be generated to a vehicle with a "lost key" situation. As time went on, clever locksmiths found ways to eliminate the use of expensive equipment, but this limited their abilities to diagnose any problems within the system.

For the remainder of this article, this system will be referred to as PASS KEY. Shortly after the system's inception, engineering decided to drop resistance value #1, thus leaving (14) possibilities. This also remains true to all present day PASS KEY systems.

We will now introduce a brief overview of theory and operation of PASS KEY. The heart of the PASS KEY system consists of four main components, they are the PASS KEY;

the ignition lock cylinder; the PASS KEY decoder module; and the starter enable relay, (see Photograph 1).

When the ignition key is inserted into the ignition lock, two built in copper contacts, or sensing terminals, take the input from the resistor pellet built into the PASS KEY.

In turn, as the ignition key cycles to "ON," the decoder module reads the resistance value information. If the information received is correct, then the starter motor should crank and a signal from the Electronic Control Module (ECM) is sent to the fuel injectors to begin their pulse action. The correct resistance is determined by the decoder module's pre-programming.

If a correctly cut mechanical key with an incorrect resistor pellet is used to turn the ignition lock to "ON," the decoder module detects this and supplies a ground to illuminate a "SECURITY" lamp on the instrument panel. At the same time, the decoder's built in timer starts a three minute delay in which there will be no ground supplied to the starter enable relay, and there will also be a lack of the digital signal to the ECM. With this lack of digital signal, there will not be a fuel injection pulse for at least three minutes.

After this type of information is received by the decoder module, the delay for restart attempts remains. Even if the correct key were input after the decoder module received the signal of a failed attempt, the time delay will be activated. An attempt to restart the vehicle before the elapsed time out period was completed would result in the time delay being returned to the initial three minute delay period. The delays are not cumulative.

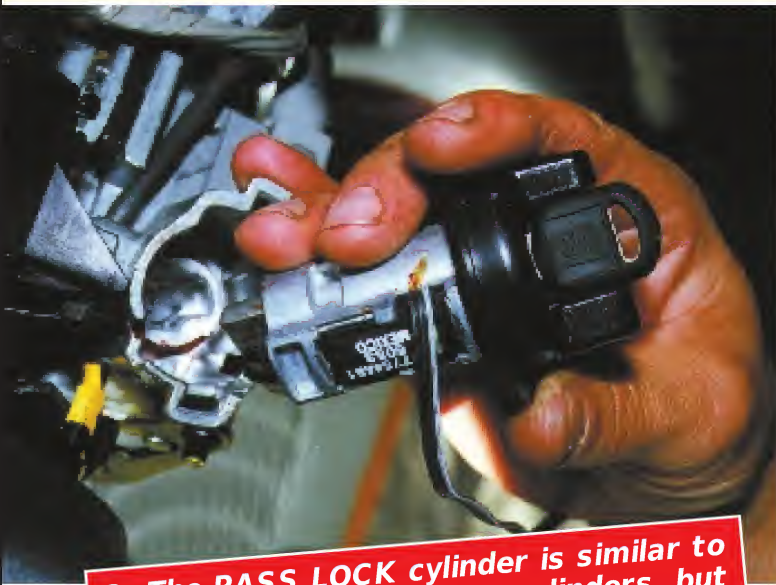
This type of sophisticated electronic system allowed vehicles to resist attempts of theft when the columns were "peeled" to gain access to the rack and sector assemblies to start the vehicle without the use of a key. Thieves would

typically break the side of the lower shift bowl and gain access to the ignition switch actuator rod. By lifting this assembly up, the ignition switch would be activated, starting the car. With PASS KEY, this attempt would be worthless. With the lack of resistor input and the specific voltage drop across the ignition key circuit, the vehicle is rendered inoperable and the predetermined time out begins. With 14 possible resistance's, this proves to be too costly time wise to steal a PASS KEY equipped vehicle. The number of vehicles stolen has been reduced drastically since the introduction of PASS KEY.

Several manufacturer's have PASS KEY interrogator modules in the field to input the various different resistance values during key generation and to monitor the correct amount of time delay within attempts. The interrogator module (see Photograph 2), is typically input at the two cavity connector at the base of the ignition column. Some vehicle's require the use of a 48 way connector adapter.

2. Strattec offers a variety of interrogator products such as: PASS KEY Deluxe Kit; Sidewinder PASS KEY kit; PASS KEY Readers and a PASS KEY Analyzer.





3. The PASS LOCK cylinder is similar to other GM ten cut ignition cylinders, but it also includes a built in Hall Effect sensor and magnet.

In 1995, General Motors introduced the use of double sided ignition keys equipped with PASS KEY. These, like the single sided version, also have 14 different resistance values and the system is serviced in the same manner as the single sided keys.

PASS LOCK/ MRD

PASS LOCK or MRD, which is an acronym for Mechanical Rotating Device, is the next entry into onboard factory installed theft deterrents. It was first introduced in late 1995 with the Chevrolet Cavalier Z-24 and the Pontiac Sunfire GT with 4 speed automatic transmission. In 1996, it was installed in all models of the Sunfire and Cavalier as well as the Oldsmobile Achieva, Pontiac Grand Am and the Buick Skylark.

This system is somewhat similar in concept to the PASS KEY system because it disables the engine from starting. It differs, however, from the PASS KEY system in the fact that it does not

require the use of a special key other than one with the correct mechanical cuts on it. There is no resistor pellet embedded in this key. It's major components are: The PASS LOCK cylinder; the Ignition Switch; the Instrument Panel Cluster (IPC); and the Power Control Module (PCM).

The PASS LOCK ignition cylinder, when correctly engaged by a mechanical key, will relay a resistance code from the lock cylinder to the instrument panel cluster. The IPC interprets the information and then communicates with the PCM. The determination is then made to either signal a vehicle start-up or a theft attempt and a vehicle disabling operation.

The PASS LOCK cylinder is similar to other GM ten cut ignition cylinders, but it also includes a built in Hall Effect sensor and magnet (see Photograph 3). The magnet, which is staked onto the cylinder plug, is rotated past the stationary Hall Effect sensor mounted onto the lock cylinder shell during the key start event (see Photograph 4).

As this occurs, a transistor circuit is activated and the voltage drop is seen by the IPC. This is the system's Resistance code, or "R" code. This information is then sent to the Power Control Module.

The ignition switch, now activated, begins a "start sense" signal to start a timing window to measure whether a tampering event is occurring. The IPC looks for the correct voltage drop and event timing window on the key's return to "RUN" after the lock is released from "Crank." In this way, the IPC can detect whether the ignition actuator rod is being forced to the "Start" position.

Both criteria must be met in order to signal a "Start" condition. The correct "R" code must be read by the IPC via the Hall Effect sensor as well as a correct event timing window. If all criteria is met, the IPC signals the PCM to pulse fuel to the injectors, delivering fuel and starting the vehicle.

The "R" code of the PASS LOCK cylinder is programmed into the vehicle's IPC at the factory or after module replacement. If a replacement module is necessary, follow the shop manual to use the re-learn procedure for a replacement lock. To date, there are 10 possible "R" codes.

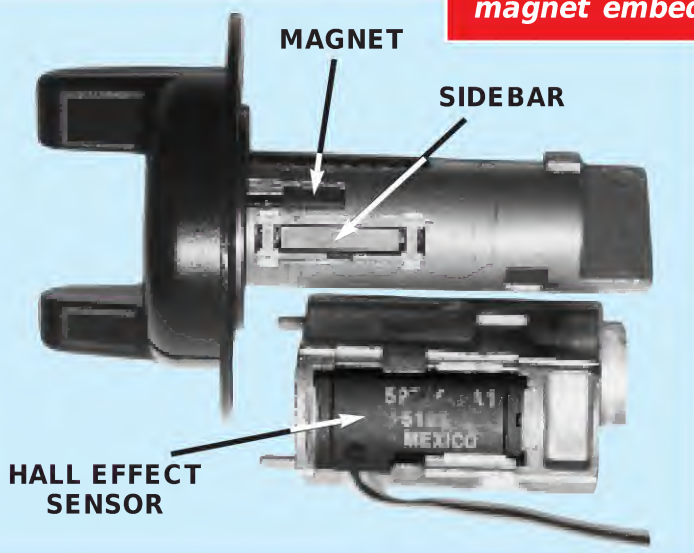
It should be noted that should a force attempt be made on the PASS LOCK cylinder, the staked magnet will be destroyed, negating the correct information to the Hall Effect sensor.

The major difference with the vehicle disabling feature between PASS KEY II and PASS LOCK, is that the starter is not effected by a theft attempt. Only the fuel is cut off during a theft or tampering attempt. The vehicle will crank, start and quickly die. Because the correct "password" is not seen by the PCM, the PCM turns off the fuel supply causing the vehicle to stall. This will disable the system for four seconds. This is called "short tamper mode." If a total of three consecutive short tamper attempts are made, the vehicle goes into "long tamper mode." During long tamper mode, the vehicle is disabled for approximately ten minutes.

PASS KEY III

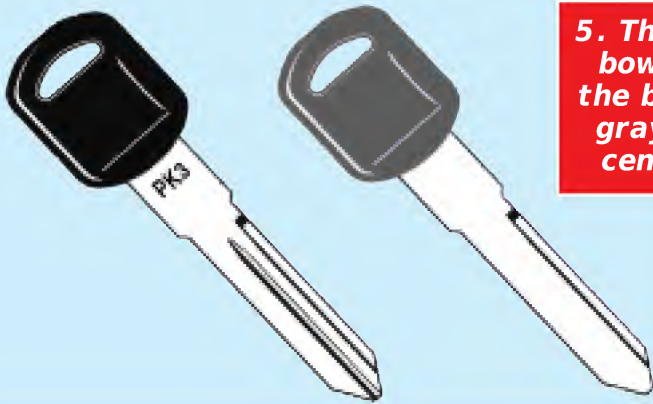
For 1997, an all new style of theft deterrent has been introduced onto the Buick Park Avenue and Park Avenue Ultra. Again, as with the two previously mentioned systems,

4. The Pass Lock ignition lock includes the Hall Effect sensor attached to the case, and the earth magnet embedded in the lock plug.





Continued from page 56



5. The Master key has a black bow and has PK3 coined on the blade. The Valet key has a gray bow and is missing the center grooving on the key.

there are similarities and differences. However, several unique features have been added to bring this type of technology to a new level of theft deterrent.

Unlike the PASS LOCK system, the ignition key plays a critical part in the operation. At first glance, there is very little noticeable difference with the PASS KEY III key. The only noticeable change is the "PK3" coined high on the key blade just below the plastic coating on the bow of the key. This vehicle is shipped from the factory with Master keys, which have a black plastic coated bow, and Valet keys which have a gray plastic coated bow (see Illustration 5).

The major components of this system are: The PASS KEY III keys; the PASS KEY III Module; the Power Control Module; and a Class II Communications Bus.

The ignition key has a built in transponder located beneath the plastic bow of the key (see Photograph 6).

The PASS KEY III Module which surrounds the ignition lock cylinder, receives a key code signal via radio frequency, much like a remote keyless entry system, when the ignition is turned to "ON." The PASS KEY III module contains the logic behind the entire theft system. If the module recognizes the correct key code from the ignition key transponder, the module sends the signal via CLASS II Communications Bus to the Power Control Module to start the vehicle's engine. The PASS KEY III module is the electrical component that replaces the PASS KEY decoder module on PASS KEY SYSTEM S (see Photograph 7).

The Pass Key III module receives various inputs from the vehicle's battery, ground, and ignition circuit. As it receives it's input from the transponder via RF or Radio Frequency, this information "handshakes" with the PCM, and normal starting operations begin.

The Class II Communications Bus is nothing more than a single wire, direct data link between all of the PK3 modules in a series loop. It provides two way electronic information to signal a start up or fault.

As with the PASS KEY II system, the Power Control Module controls the starter enable relay and the fuel injection pulse. If an incorrect transponder code is received, a signal is sent to the PCM to not allow ground to the starter enable relay or fuel injection pulse. However, there is not a three minute time out with the PK3 system. If a faulty or incorrect key is used causing a "No Start" condition, the vehicle could immediately be restarted following use of a properly encoded transponder key.

Due to the complex logic of the transponder system, there is a possible 3 trillion codes available in the transponder system. This is the reason for eliminating the three minute time out delay. The transponder code is not readable using diagnostic equipment at this time.

In a lost key situation, the PK III system would have to relearn a new transponder code after a functioning mechanical key has been generated. Then, using the vehicle's own on board specialized electronics, a new transponder frequency is input into the vehicles PASS KEY III module.

With the now mechanically operating Master ignition key, turn the ignition lock to the "RUN" position. The "SECURITY" lamp will remain illuminated for the length of the AUTO LEARN timer which is approximately ten minutes. When the SECURITY lamp turns off, remove the key from the lock. Within ten seconds, reinsert the key and return to the RUN position and again the SECURITY lamp will illuminate. Wait for it to expire. Do this procedure a total of three times, totaling thirty minutes. After this is complete, turn the newly encoded key to the RUN position. If the SECURITY lamp remains off, the newly encoded key has been accepted and the vehicle will start. A similar procedure, less the AUTO LEARN procedure, is needed when making duplicate keys.

The PK III system has the capability of allowing 10 possible keys using that specific transponder frequency code. No more can be entered into the system without using the specific relearn procedure and a different transponder code.

For in depth service procedures, diagnostics, and key generation, consult: *The National Locksmith Guide to Steering Column Service.*

Ford P.A.T.S. System

The Ford P.A.T.S. system, or "Passive Anti Theft System," is very similar in operation to the General Motors PASS KEY III system. The system is also centered on transponder technology.

The components for the Ford P.A.T.S. system are: The Passive Anti Theft Control Module; Transceiver; Powertrain Control Module; Encoded Ignition Key; and the J-1850 Communications Network.

As with the PK III system, when the ignition lock is cycled to "ON," a radio frequency signal is sent out by way of

6. Despite the complexity of transponder technology, the transponder chip easily fits within the head of the plastic bow.





7. The PASS KEY III module is the electrical component that replaces the PASS KEY decoder module on PASS KEY SYSTEMS.

a transceiver. The transponder in the bow of the key handshakes with that logic and transmits a quiescent frequency back to the transceiver control unit. At this point, this data is linked to the vehicle's powertrain control module via the vehicle's J-1850 communications network, allowing a start up condition if the information received is correct.

This technology was introduced in 1996 and began with the Ford Taurus and Mercury Sable. It was then expanded to the Ford Expedition, Mustang, and Lincoln Town Car for 1997.

On the Ford Taurus and Mercury Sable vehicles, the transceiver antenna is found as a small wire wrapped ring around the mouth of the lock housing. The transceiver needs to be in fairly close proximity to the transponder to avoid unwanted signals.

In comparison to the PK III system, the Ford Taurus and Mercury Sable P.A.T.S. System allow for 16 possible change keys. These keys use the 8 cut FORD 82 groove keyway.

With respect to the 1997 Mark VIII systems, only 8 keys can be programmed into the system. The programming procedure is as follows:

Programming A Duplicate Key

1. Insert a programmed key into the lock and cycle from the "RUN" position and then back to "OFF."
2. Within 15 seconds after this cycle, insert a new encoded key into the ignition lock and turn to RUN or START.
3. If programming is successful, the THEFT indicator will

illuminate for two seconds and the control module will enable the vehicle to start

Programming Without An Existing Key

1. Generate a mechanical key and duplicate to a transponder equipped key.
2. Insert in the ignition and turn to the RUN position. The THEFT indicator will illuminate and begin flashing.
3. The lamp will flash for approximately 15 minutes. When the lamp cancels, turn the key to the "OFF" position.
4. Turn the key back to the "RUN" position and wait until the lamp goes out again.
5. Repeat this sequence until a total of three repetitions have been completed, totaling 45 minutes.
6. The vehicle has now been reprogrammed.

As we can see, technology continues to play a type of "one-up-manship." Constant change and then more changes will continue to affect all of us as locksmiths. Just as a simple law of physics dictates that "For every action, there is an equal and opposite reaction," we will have to react with skills that will allow us to continue the service we have provided for years. The automakers have to react every time the public cries out for better theft measures, leaving opportunity for the locksmith to continue to strive to be the best in his/her field.

If you need further information on PASS KEY II, PASS LOCK or MRD, PASS KEY III or Ford's P.A.T.S. system contact Strattec at: (414) 247-3333.

BUSINESS BRIEFS

Mas-Hamilton Announces Alternative Design To The Current X-07®

Mas-Hamilton will be introducing several new products this year, one of which is an alternative design to the current X-07®. This original X-07® design and the CEAC-X07™ are the only locks of their kind in the world which meet Federal Specification FF-L-2740 governing containers which protect classified materials throughout the U.S. Government. This alternative design will be free of patent royalties which are currently being paid to C & M Technology on the original X-07® design. Mas-Hamilton has implemented this state of the art technology primarily to meet anticipated competitive products and to assure that they maintain their market leadership position.

US Lock Opens New Distribution Center

US Lock Corporation is proud to announce the Grand Opening of our 5th National Distribution Center in Charlotte, NC. Security Professionals can now enjoy one day shipping from our fully stocked and ready to ship warehouse into North Carolina, South Carolina, Virginia and most of Georgia. US Lock is dedicated to helping Security Professionals grow their business by bringing them convenient service, high fill rates and competitive pricing. Our Charlotte facility is located at 1515 Enterprise Drive, Charlotte, NC 28206-2218. Local Phone: 1-704-334-0333. Nationwide: 1-800-925-5000

Locknetics Access Management Software And Systems

Locknetics Security Engineering has released an

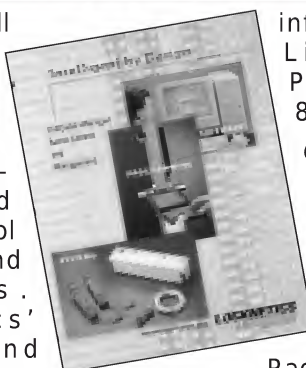
eight page, full color brochure describing their computer-managed access control software and systems. Locknetics' systems and hardware products are easily integrated to provide powerful, programmable, fully portable electronic locking solutions for industrial, educational, commercial and institutional customers. The Intelligent by Design brochure describes two access management software options: LockLink™ and LockTrak™. LockLink is Windows-based, and is designed for large installations with tens of thousands of users and access points. For more information call Locknetics Security Engineering at: Phone: 860-584-9158

National Security Safe To Be Acquired By Linsalata Capital Partners

Linsalata Capital Partners announced today the acquisition of National Security Safe Co., one of the nation's leading commercial and home safe manufacturers, based in American Fork, Utah.

This transaction follows Linsalata Capital Partners' October 1995 acquisition of Liberty Safe and Security Products, Inc., the nation's largest manufacturer of high-quality gun and residential safes.

"The acquisition of National is part of our long-term strategy to create one of the nation's leading security products companies," said Chase Anderson, Senior Vice President of Linsalata Capital Partners. For additional



information, contact: Linsalata Capital Partners at: 216-831-8272

Olympus Lock Is Now Online

For valuable resources for your industry, check out Olympus Locks Resource Link Page! Olympus Lock manufactures and distributes a wide assortment of high quality patented rekeyable small/large pin cabinet locks, interchangeable core cabinet locks and solid brass padlocks. The company can be reached at 2720 NE 115th Street, Seattle, WA 98125. Phone 206-362-3290 or 800-525-0954; fax 206-362-3569; e-mail info @ <http://www.olympus-lock.com>

First Of It's Kind Service From Adams Rite

Adams Rite Manufacturing Company announces a new fax-back system that puts up-to-date information in customer's hands quickly and conveniently. By calling 1-888-RITE-FAX (748-3329), customers can receive installation templates by fax for door hardware, exit devices and electric strikes. This enables customers to get the latest templates at the same time new engineering drawings are made on each product, eliminating the problems with having to wait for new information to be mailed out. The service is available 24 hours a day, seven days a week. For information call 1-800-87-ADAMS.

Southern Steel Catalog

Southern Steel Company is pleased to announce the

latest security device, their new catalog. In reviewing it, you'll find products that have been perfected over the past 100 years, the results of many decades of hard work, research and experience. The latest products include the 10500 and 10600 Institutional Mortise Locks and the CPS 240 Concealed Door Position Switch. Southern Steel looks forward to continued unparalleled service to our customers, in our relentless pursuit of the strongest security products in the industry.

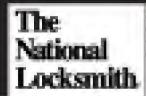
ACSI Appointments

Architectural Control Systems, Inc. (ACSI) has appointed White Associates, Overland Park, Kansas, as representatives covering Kansas, Nebraska, and Western Missouri. For more information contact, Andrew White, White Associates, 5742 W. 97th Street, Overland Park, KS 66207 (903) 341-4696 or FAX (903) 341-1381 OR Mark LeGrand, ACSI, 10666 Gateway Blvd., St. Louis, Missouri 63132 (800) 753-5558 or FAX (314) 432-2090.

Von Duprin's New Security Hardware Catalog



Acme Security is proud to introduce the release of Von Duprin's new Door Control and Security Hardware Catalog. This catalog is a comprehensive listing of the "high security" products available from Von Duprin through Acme Security. For a copy of this catalog, call us at 800-348-2263. **TRL**



In this article, Dale examines two tools for the serious and professional safeman.

Diebold 175/70 Safe Deposit Lock Pick

The first tool is the "Diebold 175/70 Safe Deposit Lock Pick Tool", manufactured by Lock Defeat Technology. Their motto is: "Designers of specialty tools for the serious safeman."

When I first thought of trying this tool, I thought I would have little use for it. With the advent of several new hotels and motels in my area, I have given this instrument several trials, and it has never let me down.

The tool was designed and realized by Philip Shearer, a known professional safeman. He sent me the tool with both a right and left hand lock to practice on. In less than 10 minutes of practice, I was picking these locks easily.

Photograph 1, shows the back of the standard 175/70 Diebold Safe Deposit lock. The keys, both renters and guard, can be quickly changed by using a special hex wrench (torque) tool. The change tool is a security hex tool featuring a hole in the base which fit over a pin in the center of the changing screw. The pin can be broken and removed if desired, so a regular allen wrench can then be used.

The Diebold 175-70 Lock Defeat tool comes in a nice plastic box with additional allen wrenches for tool adjustment (*see Photograph 2*). If you look at the base of the handle where it goes into the tool body, 7 color space bands are visible. These show you at a glance which lever you are working on.

The two most important factors to remember when using this tool is to keep the tool face flat against the lock nose when using. You must also move the tip control handle slowly so you can react to the clicks of the gates of the levers when they are aligned.

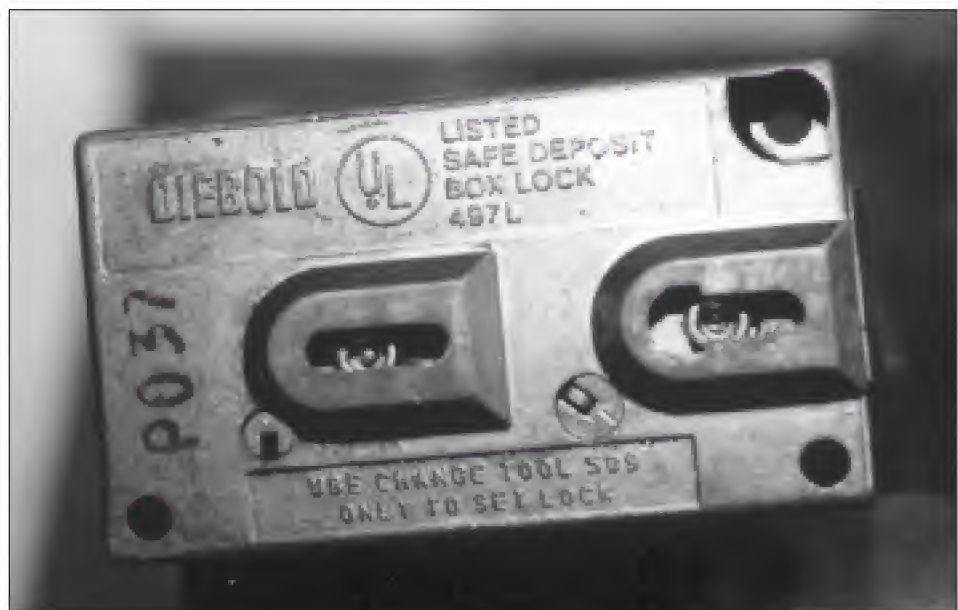
Photograph 3, shows the tool in position for picking a left hand lock. If the lever feels bound as soon as the manipulating tip begins to move it, it is either a number 7 or number 1 gate. Both of these levers have false gates to confound picking.

If you have trouble picking the

Safe Tools That Work!



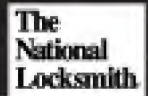
by Dale Libby



1. Back of the 175/70 Diebold safe deposit lock. This lock is key changeable with the S D 9 change tool.



2. The Diebold 175-70 Lock Defeat Technology pick tool shows the lever you are manipulating at a glance.



3. This tool can be used on both right and left hand locks. The tool must be straight and faced flat on the nose of the safe deposit lock to work properly.

lock, let tension go on the opening/turning handle and start again. *Photograph 4*, shows a just picked right hand lock. To see how

the tool works, just look into the cut out adjacent to the levers inside the lock and watch the manipulating tip work. It is so easy, it is diabolical.

Note: It is never necessary to turn the manipulating tip more than 85 degrees. If there are quite a number of number 7 depths in the lock, then only a few of the levers will have to be moved.

The directions for the Diebold 175-70 pick tool are well illustrated and easy to follow. The tool sells for around \$200.00 and is well worth it. If you service a bank or hotel that has a nest of these locks, then this tool is a necessity. You will never have to buy a new lock. You will only need a change tool and a bunch of set up keys. Nothing could be easier or faster. This tool gets a full 4 star rating from me! For more information call: Lock Defeat Technology 617-871-4346.

HAWKEYE

The next tool for review I have used extensively and have found to be quite impressive. It is the HAWKEYE brand of 'gradient lens' borescope. I can tell you right out of the box that in my opinion, this is the best borescope system for the money.

With the advent of glass plates, exotic barriers of metal and alloys, going through the side of a safe is a

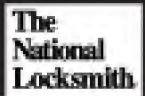


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4. To view the manipulating tip of the tool in action, just look into the cut out in the lock. You will see the tip raise each lever independently to the proper height.

new choice that safemen must make. The purpose for this it to read the combination through the change key opening. If you have a bad scope, this is quite a job. With the HAWKEYE system, it is almost a pleasure to do. With a 'bad' scope, you will be severely handicapped.

The inside of the case has cut-outs

for the tree main parts of the scope system. There is the primary scope tube which comes in either 7", 12" or 17" lengths. There is also 90 degree mirror tubes available in the same lengths. *Photograph 5*, shows the inside of the case with the scope and mirror tubes



5 The H A W K E Y E includes a specially adapted Mag flashlight, straight view scope, and right angle mirror tube.

along with the illuminator.

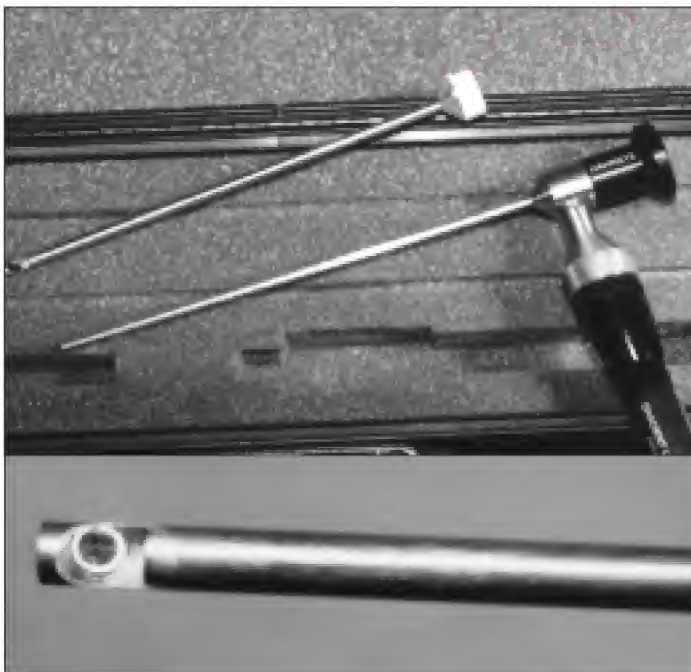
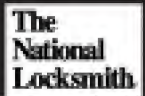
The light that comes with the instrument is a modified Mag light with a Krypton bulb. The borescope

Major

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6. The H A W K E Y E scope assembled. The right angle mirror tube slides easily over the scope tube for easy assembly and a non-corrected view.

screws on the adapter at the end of the Mag light. To turn on the light, just turn the end of the flashlight. The specially designed Mag flashlight handle connects to an industry

standard ACMI light port connector. Because of this, one can use an optional 150 watt halogen light generator with fiber optic cable, a lens adapter, a 1/2" chip camera, and a choice of monitor.

Photograph 6, shows the flashlight screwed onto the base of the scope. The mirror tube then slips over the scope end to make it right hand operation.

I do not know the theory of gradient lens viewing, but it is clear and slightly magnified, both in the straight and 90 degree viewing mode. The illumination is supplied with a very nice fiber optic bundle which is reflected 90 degrees when the mirror is used.

This scope system does not use a prism system to correct rotation or to diminish the available light. This means that when turning the wheels to the right, they appear to move to the left. This is no big deal, and quite easy to get used to. When looking for a gate, it makes no difference which way the wheels appear to be turning.

The average price of the HAWKEYE borescopes is \$300.00 for the 7"; \$400.00 for the 12" and \$500.00 for the 17". The mirror tubes are just over \$100.00 each. Other options include custom cases, cameras and light sources.

I would like to say again that I have not seen a better borescope in this price range with the incredible optics and options available. I again give this product 4-1/2 stars. It is that good. A great scope system makes opening safes a real pleasure, and in fact takes most of the challenge out of safecracking. The HAWKEYE is available through Mark Bates Associates (MBA) at: (888) MBA-5495.

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On Q!

Opening the '97 Infiniti QX4 and Q45

by Tom Gillespie, CML

By late 1970 and into early 1980, the foreign car manufacturers were eating up their American counterparts. The literal flood of competition from over the ocean had taken the "Big Three" by surprise... sort of.

Although General Motors, Ford and Chrysler truly had ignored imports when they first hit the shores in 1970, by that time they realized that Datsun, Honda and Toyota would never go away completely.

It was still generally assumed that as long as the big boys had some competitive products, they could still get a major share of the elusive econo-car market. After all, since the mid-'70s, General Motors had been selling Isuzu products, Ford had been partnered with Mazda, and Chrysler buddied up with Mitsubishi.

These partnerships had allowed sales of small Japanese built economy cars and trucks to be sold in American showrooms, under the familiar emblems of the bow tie, blue oval and pentacle. And although some buyers were aware of the foreign connection, most buyers actually thought a Chevy Luv was just a small Chevrolet pickup. Likewise with the other offerings.

It was also still widely believed that as long as the Asian influence sold their compact little cars and trucks to the public — and stayed in their little niche — there really wasn't anything to worry about. I mean with those little cars, how many Falcon, Valiant and Nova buyers could those guys steal away? Ah yes, the lessons we learn in life by assuming!

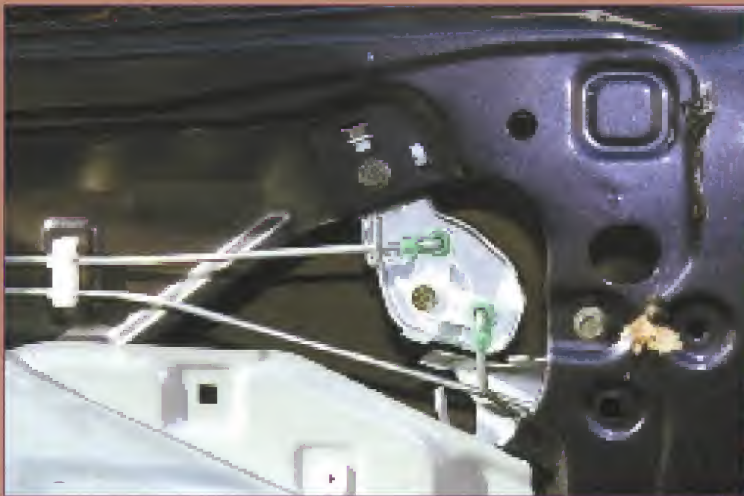
Of course as we all know by now, those small cars from the "Asian Big 3" spawned bigger cars, and those bigger cars led to the luxury divisions we



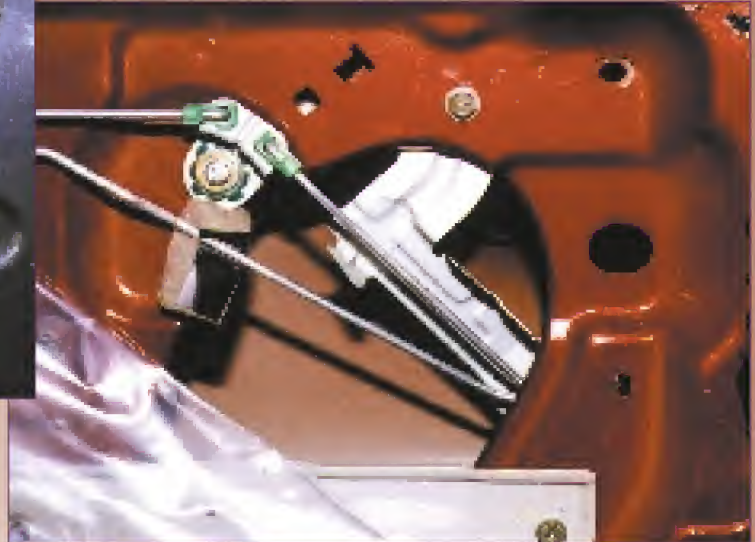
The QX4 SUV is brand new for 1997.



The flagship Q45 sedan was one of the first two charter members of the Infiniti lineup.



While the front door linkages can be attacked the rear doors offer unrestricted access.



Insert tool 3" forward of the divider with the tip facing rearward.

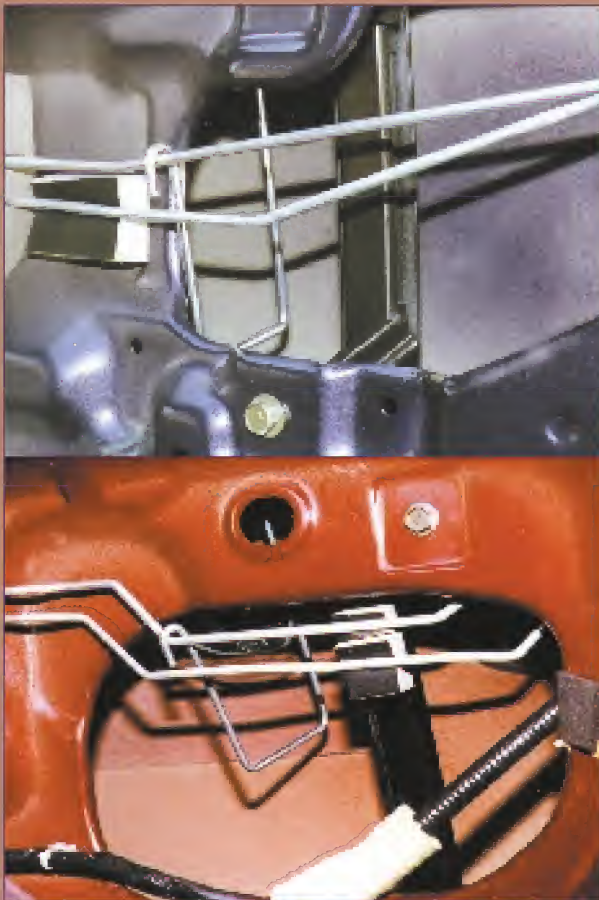


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Twist the tool to bind the rod and travel it forward to unlock.

know today. Although not as old as Honda's Acura division — since 1986 — or as prolific as Toyota's Lexus, the Nissan Infiniti models have nonetheless gathered a loyal following since their initial introduction in 1990.

Because of the still growing sport/ utility vehicle (SUV) market, it was only a matter of time before Nissan responded to the demand with an upscale version of its popular Pathfinder 4X4. The QX4 SUV (see Photograph 1) is brand new for '97, while the flagship Q45 sedan (see Photograph 2) was one of the first two charter members of the Infiniti lineup. The ill-fated M30 coupe faded away after two years of very slow sales.

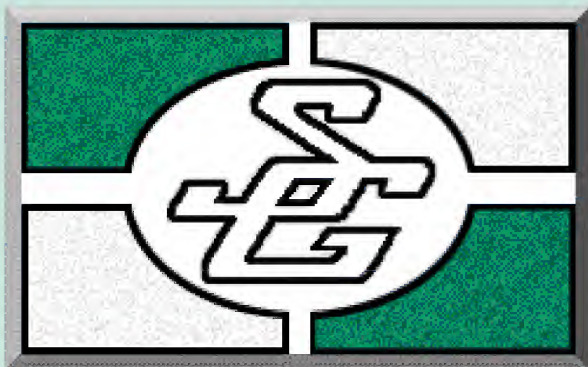
Looking at the lockout opening procedures for the 1997 QX4 and Q45 shows that both vehicles use a similar method and the same tool. While the front door linkages can be attacked (see Photograph 3)

the rear doors offer unrestricted access to the active locking rods.

At PRO-LOK we always prefer to use the passenger side rear door, but the techniques shown below will work on either side. The set of instructions for the QX4 will be used here. (The exact measurement distances for the Q45 differ slightly, but I've noted the minor differences in the following text.)

Here is how we opened them:

1. Wedge the REAR passenger door glass about 8" (Q45 - 7") forward of the window track or divider. Insert an inspection light and identify the horizontal linkage rods as they travel below the divider to the latch.
2. Insert an A041 or similar lockout tool 3" forward of the divider with the tip facing rearward (see Photograph 4).
3. Lower the tip of the tool into the door cavity 7" (Q45 - 7-1/2") and walk it rearward 2" (Q45 - 3"). Rotate the tip of the tool 90 degrees clockwise (Q45 — 45 degrees clockwise).
4. Set the tip of the tool down over the upper horizontal rod. Twist the tool to bind the rod and travel it forward to unlock the door (see Photograph 5). **TRIL**



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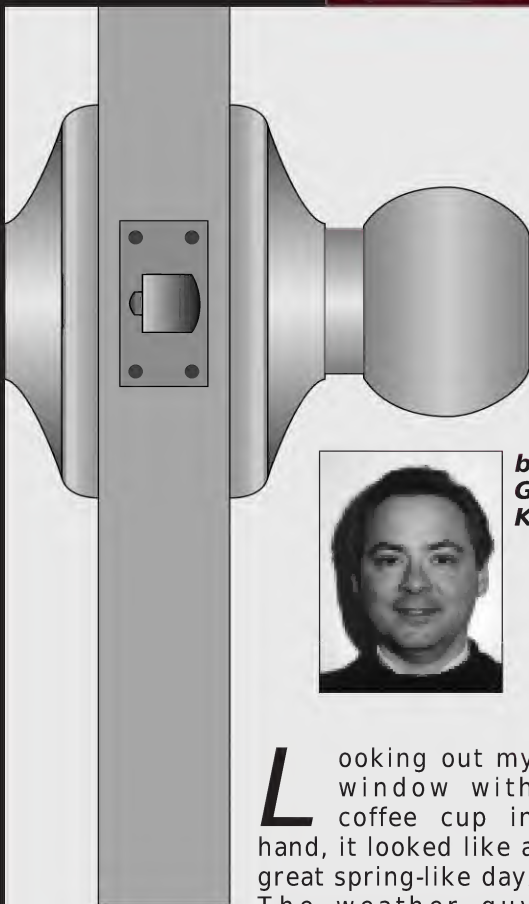


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Opening New Doors P art 1



by
Giles Kalvelage

Looking out my window with coffee cup in hand, it looked like a great spring-like day. The weather guy

reported the temperature was to be in the high twenties or low thirties. If you can believe it, this was a break from the cold winter weather we've grown tolerant of, and the sun was shining brighter and more beautifully than can be expected during the middle of a summer Hawaiian day!

Excited that I finally had a writing and photographic assignment for *The National Locksmith*, that did not require physical work, I snatched my camera bag — proud of myself of remembering to stock it with 15 rolls of film — and headed off to my pictorial assign-

ment about a mile away. I went to my truck and found it to be a bit breezier than it had looked from my window. With "breezier," came wind-chill. We were back to "winter."

The job we are about to cover entails replacing the back door, frame, door closer, threshold, sweep and locking hardware at *The National Locksmith*. In other words, this is an entire door and frame removal and installation, which you will soon see was badly needed.

At the job site, I met the heroes of our story, Gary Ipsen and Ted Kukla, specialist employees of one of Chicagoland's largest locksmith companies, Anderson Lock. Reaching



1. The original door. It doesn't close well, the hinges are rusted and the frame is rusted.



2. Rusty out mouse holes continually dribble mortar.

into my camera bag, I rooted around lenses, film canisters, a tripod and batteries. If you noticed, I found everything but my camera. While I've forgotten film in the past, this was the first time I forgot the camera.

As I scrambled back home for my camera, Gary and Ted had the pleasure of sucking down another cup of steaming hot coffee while I got my act together. I returned shortly thereafter with camera in hand.

The "before" pictures show the original door which was installed on *The National Locksmith's* building when it was built about 20 or 25 years ago (see *Photograph 1*). It's a metal door with a metal frame which is the rear entrance to the building. Inspecting the bottom of the frame, we can see where it has rusted away. Decomposed mortar filler dribbles out of the rust holes (see *Photograph 2*).

The door closer hangs by loose screws from the top of the door frame (see *Photograph 3*). It has come time for this door assembly to meet its final reward - the dumpster.

Gary and Ted rolled in tool carts from off their trucks to prepare for their job. Not having installed any



3. This closer has been re-secured more than once.



4. Not a single key blank, plug follower or pick on these carts!

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5. Ted holds the door while Gary removes the hinges from the frame.



7. Time to remove the threshold.



8. An initial prying of the threshold allows access for an even bigger bar.



6. The door is disconnected and can now be removed.

metal doors myself, I was impressed with their supply of tools and materials. Their carts seemed to contain more fasteners, drill bits and taps than my truck has keyblanks (see Photograph 4).

In Photograph 5, Gary dismantles the closer arm, alarm contacts, and door hinge screws from the old frame while Ted steadies and removes the door (see Photograph 6).

The next step is to remove the threshold (see Photograph 7). It never seems to be as easy as removing the mounting screws. When kindness, a screwdriver and a small hammer failed to release the screws, a bigger hammer, crowbars and pry tools soon prove to be a better match against the threshold (see Photograph 8).

Continued on page 88



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Continued from page 84



9. Remove the screws that hold the threshold in place.

Once the threshold is removed, the mounting bolts still left standing are reckoned with. It's best to get the mounting bolts out if at all possible, because if they're not removed, invariably they will interfere with the installation of the new threshold which will be installed near the end of this project. All but one threshold mounting screw, which was then cut flush with the ground, was removed (see Photograph 9).

The next step of the project was to remove the old door frame. Many door installers work alone and my hat goes off to them, but this team concept of attacking the door frame showed how good teamwork can reduce a job from seriously tough, to manageable, especially on a windy day.

Normally, when a building is built, the masons (bricklayers, not a fraternal organization), set the door frame in place and build a brick wall around the frame. As the bricks go up, mortar is then filled into the frame.

Up each side of the frame at about three equally spaced locations, the mason will then place a frame anchor between the bricks and mortar them into place. This secures the frame for a "brick strong" installation.

Frame Removal

The first step to removing the frame is to break the bead of caulk between the frame and building and then gently prying the frame away from the

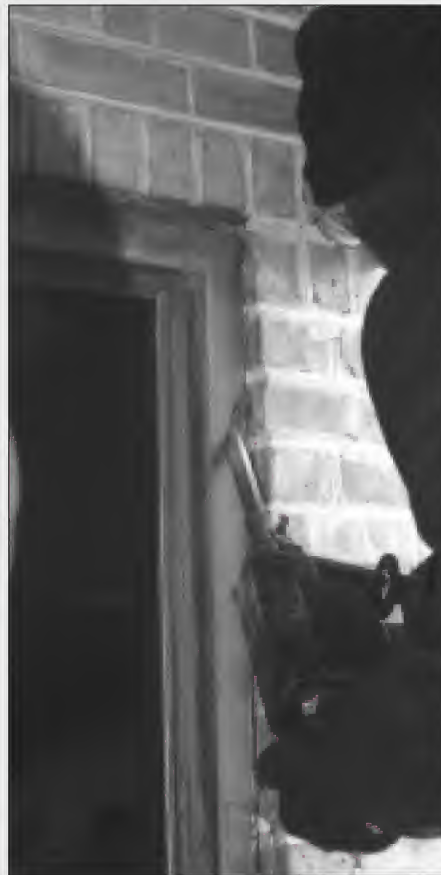


10. The first step to removing the frame is to break the bead of caulk between the frame and building.

building (see Photograph 10). As the frame is gently pried from the building, the frame anchors are located. If one gets too aggressive at removing the frame without disabling the anchors,



11. While breaking the bead of bond between wall and frame, skill avoids breaking any bricks.



12. Ted is cutting through the frame to the top right anchor.

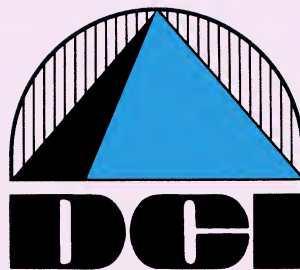
there is a good chance of damaging the masonry (see Photograph 11).

I should tell you that while the outside of this building is brick, the inside of the wall is cinder block, and as we will later see, there is a mortar filled gap between the outer and inner walls.

Once the frame is gently edged away from the wall, the anchors are found and their location is marked on the frame. It is now time to disable the anchors. This is no time for a Dremel tool! Ted grabs an impact hammer and takes it to town. Even with the impact hammer and a cold chisel attachment, this frame fights for its life (see Photograph 12). Starting at the bottom anchor first, Ted initially cuts through the frame with the impact hammer over the anchor to weaken it. Then he attacks the anchor from between the wall and the frame, and just keeps going back and forth until the frame anchor is cut through (see Photograph 13). This must be done for each of the six anchors.

Once the anchors are all disabled, a little more work (brute force) with the impact hammer, crowbars, pry tools, and armstrongs are again applied to

Continued on page 92



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Continued from page 89



13. The frame is slowly separating from the wall.



14. Ted persuades the mortar to release the frame after the anchors have been disabled.

the two sides of the frame - but not yet at the top (see Photograph 14).

Once both sides of the frame are detached from the walls, rocking the sides of the frame removes the top of the frame away from the header (see Photograph 15). This is best performed by two guys because the frame is less likely to fall and damage something or someone.

With the frame removed from the doorway, the mortar is readily seen within the cavities of the old frame. This is the stuff that makes installing concealed wiring for electronic door controls almost impossible (see Photograph 16).



15. Gary and Ted both rock the frame to detach it from the header.

16. The old frame is removed and the mortar is plainly visible.



On the opening side of the frame, the construction of the wall as well as the remnants of the anchors can be seen (see Photograph 17).

Debris litters the floor, and while the opening looks like an opening, Ted and Gary know that it's not an opening until the sides are smooth, plumb, and wide enough for the new frame. Brute force begins to transform into mental forecasting. Die grinders come out to cut flush the remnants of the old frame anchors and to straighten the sides of the brick opening (see Photograph 18).

Levels come out to check the plumb lines. Concerns arise over the

grade from inside the building over the new threshold to be installed, and the grade of the outside pavement - which has apparently been added since the building was first erected. After all, wouldn't it be a bummer to install a new door and not have it open because the bottom of the door hits a bump or hump in the pavement?

More mental forecasting comes with the mounting of the new frame. A look at the cross section of the walls shows the gaps between brick, mortar and cinder block. New frames are anchored in place with anchor bolts,



17. In the center of the shot is an anchor. The wall is brick on the outside and cinder block on the inside.



18. The die grinders come out for an initial smoothing of the opening.

not mortar. The question that then comes into play is where to set the anchors? Good question. Gary and Ted disregarded my suggestion of using duct tape to secure the frame. I was just trying to make their life easier!

Next month the method on where to locate the frame anchors will be revealed, and the completion of the installation covered. see you then. **TRL**



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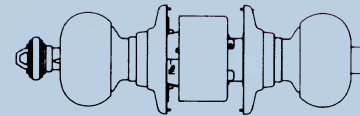
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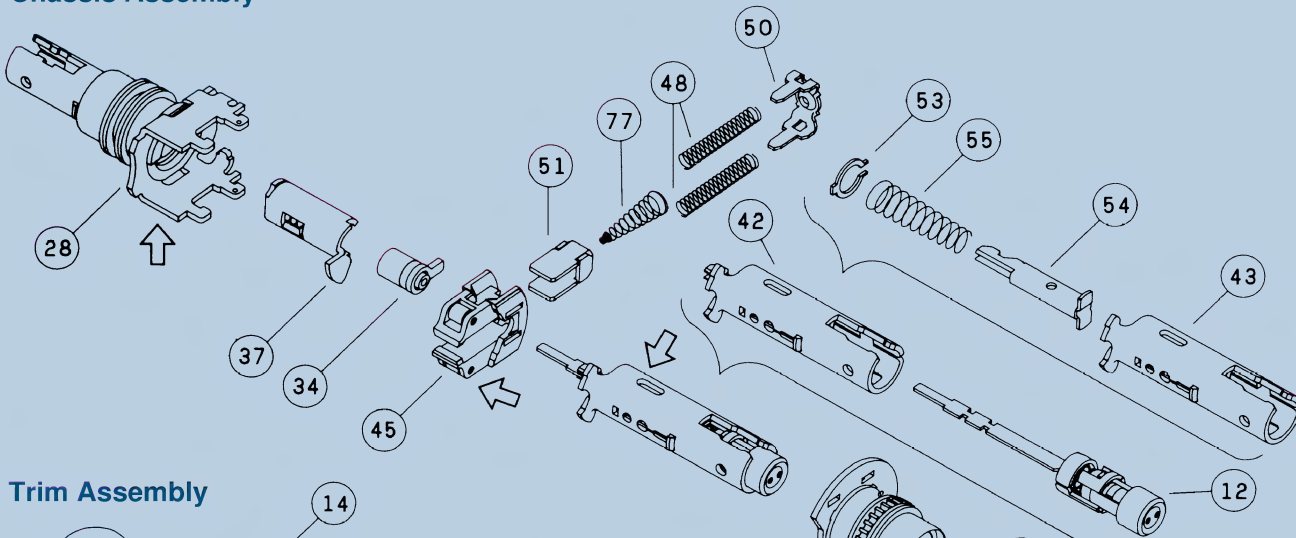
EXPLODED VIEW

Schlage D85PD Hotel/Motel Lock

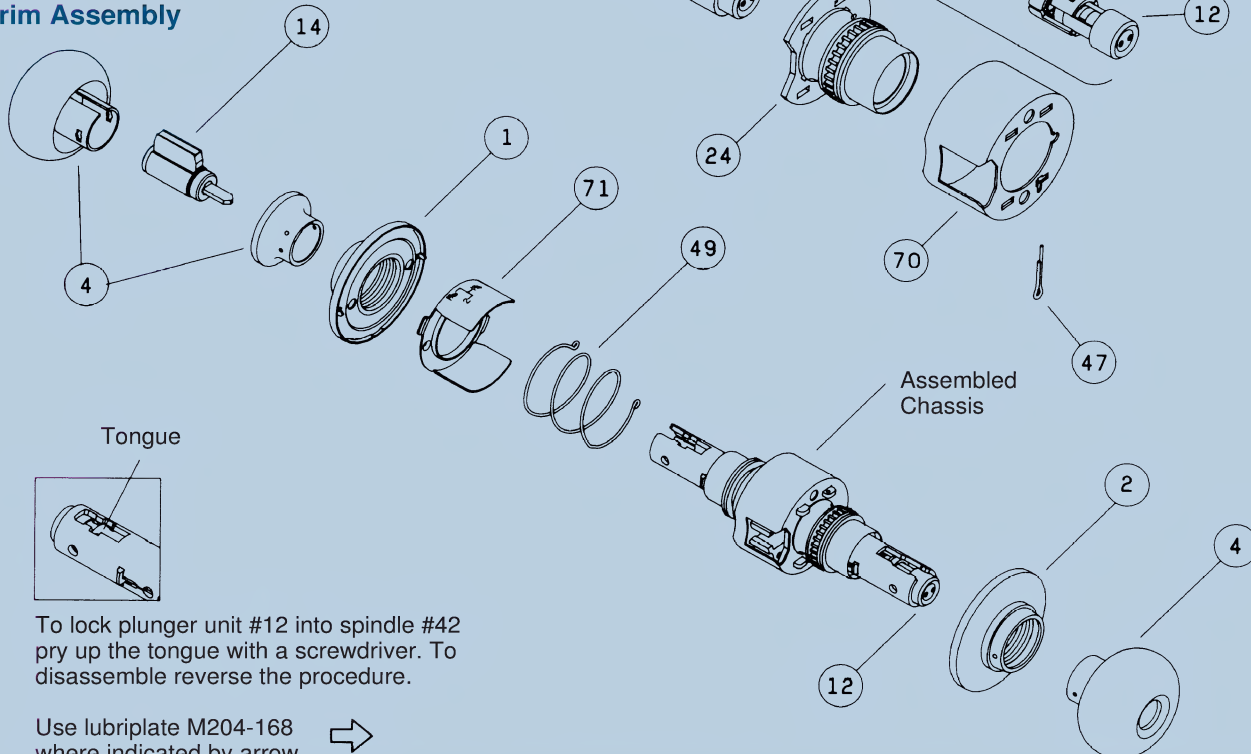
Outside knob fixed. Entrance by key only. Push-button in inside knob activates visual occupancy indicator allowing only emergency masterkey to operate. Rotating inside knob or closing door releases visual occupancy indicator. Rotation of inside spanner-button provides lockout feature by keeping indicator thrown.



Chassis Assembly

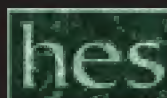


Trim Assembly



To lock plunger unit #12 into spindle #42 pry up the tongue with a screwdriver. To disassemble reverse the procedure.

Use lubriplate M204-168 where indicated by arrow. ➡




<i>Sym.</i>	<i>No.</i>	<i>Description</i>	<i>Sym.</i>	<i>No.</i>	<i>Description</i>
1.	04-001	Outside Rose	40.	C203-493	Plug
2.	04-002	Inside Rose	41.	C203-733	Plug
3.	04-006	Closed Knob	42.	C203-858	Spindle & Hammer
4.	04-007	Open Knob	43.	C203-916	Spindle & Catch
5.	04-017	Rose	44.	C203-917	Spindle & Catch
6.	04-020	O/ S Plunger Unit	45.	C303-009	Slide & Rollers
7.	04-021	O/ S Plunger Unit	46.	C303-400	Spindle & Catch
8.	04-022	Plunger, Out	47.	C503-008	Cotter Pin
9.	04-023	I/ S Plunger Unit	48.	C503-019	Spring, Slide
10.	04-024	I/ S Plunger Unit	49.	C503-308	Spring, Anchor
11.	04-025	I/ S Plunger Unit	50.	C503-314	Seat, Slide Spring
12.	04-026	I/ S Plunger Unit	51.	C503-315	Catch, Slide
13.	23-001	Cylinder	52.	C503-316	Catch, Slide
14.	23-003	Cylinder	53.	C503-324	Washer
15.	38-072	Solenoid & Diode	54.	C503-334	Hammer, Plunger
16.	38-073	Solenoid & Diode	55.	C503-335	Spring, Hammer
17.	A501-171	Washer	56.	C503-339	Spindle, Key
18.	A501-746	Screw	57.	C503-353	Spring, Stop
19.	C100-059	Spindle & Plug	58.	C503-359	Cam, Key
20.	C100-062	Spindle & Plug	59.	C503-360	Rider, Cam
21.	C100-255	Spindle & Plug	60.	C503-361	Pin, Cam
22.	C100-433	Spindle & Plug	61.	C503-362	Plunger
23.	C102-522	Hub & Cap Out	62.	C503-364	Spring
24.	C102-524	Hub & Cap Ins	63.	C503-368	Spindle & Catch
25.	C102-540	Hub & Frame	64.	C503-371	Plunger
26.	C102-541	Hub & Cap Ins	65.	C503-400	Pin
27.	C102-542	Hub & Cap Out	66.	C503-508	Rider
28.	C102-570	Hub & Cap Out	67.	C503-509	Pin
29.	C102-572	Hub & Cap Ins	68.	C503-775	Rose Outside
30.	C102-837	Cam & Plug	69.	C503-965	Sleeve, Plunger
31.	C102-840	Cam & Plug	70.	C603-500	Housing, Slide
32.	C203-367	Spindle & Catch	71.	C603-501	Anchor
33.	C203-374	Spindle & Catch	72.	C603-897	Screws
34.	C203-376	Plug	73.	C604-203	Stop
35.	C203-390	Spindle & Cam	74.	C604-204	Spindle, Key
36.	C203-391	Spindle & Cam	75.	C604-205	Clip, Retaining, Sol.
37.	C203-411	Spindle & Spring	76.	C604-237	Pin
38.	C203-491	Spindle & Cam	77.	G505-747	Spring, Catch, Slide
39.	C203-492	Spindle & Catch			

TNL

Call of the

WILD

BY TONY BLASS



***"Men need
play and
danger.
Civilization
gives them work
and safety."
— Frederick
Nietzsche,
philosopher.***

***"I love to bang my head
against somebody."
— Ray Nitchke, Green Bay
Packers.***

***"On the road again, I just can't
wait to get on the road again."
— Willie Nelson, Taxpayer.***

Being a mobile locksmith satisfies the basic needs of man that modern civilization seems to have forgotten; the need for independence, the need to hunt, to forage, to face the forces of nature on his own. And, when the going gets really tough, the need to hop in the back of the van for nappy-time.

As I cruise the highways and byways of this great land of ours, the wind whipping through my hair and between my ears, I watch my appointment sheet for the day flutter out the window. In spite of that, I think to myself, "What a great job this is!"

Out on the road, a man can be a real man, and of course so can a woman. Or vice-versa. Well, we'll figure this part out later. My point is that you get to set your own rules and play your own game. The great outdoors is your office. I feel sorry for people stuck in the same room for eight hours a day, five days a week. I get stir crazy in an office or

shop setting and start to feel like a caged animal. My metabolism slows down to the point where some in the medical community believe that legal death occurs and the vital organs should be removed and given to those who will put them to better use.

I'm not much of a social butterfly either. I like to limit my socializing to the following situations:

A. Sharing my culinary preferences with the person manning the drive-through window at the various burger joints, and:

B. Exchanging handy driving tips with people who cut me off during lane merging. So I'm perfectly suited to being a mobile locksmith.

As I drive along, I often gaze at a magnificent view of Mt. Tamalpais here in Northern California. (Tamalpais is an Indian name which translates to "Mountain of the brave, free-spirited, fleet-footed locksmith.") When you are out driving in the fresh air, watching the scenery go by, time seems to pass much more quickly. It seems like just yesterday I was a young, virile, 25 year old, running a one van operation, out to conquer the world. Now, I'm a slightly testy 48 year old, running a one van operation, out to conquer a tall beer. It's been a good run however, and if you are going to end up burned-out on any job, this is as good a place as any to end up.

Many of my customers confide in me that they too, once had urges to become mobile locksmiths. Sometimes they will give me the reasons it never happened, such as:

"I was going to do it, but it turns out I am allergic to hot wax," or:

"I gave up the idea when I found out it took more than an hour to learn the trade," or:

"I realized I wasn't very mechanically inclined when it took me 45 minutes and three serious injuries to open a box of Wheaties."

Many of my friends over the years jealous of my

independent, nomadic lifestyle, have insisted that I teach them the locksmithing trade. Several of them have gone on to start their own successful businesses. Others will be coming up for parole soon.

Even after 21 years of being on the road as a locksmith, I still appreciate what I do. I remember the day I decided to become a locksmith. I was outside, on a break from my boring office job, when I saw a lock van drive by and I thought to myself, "Hey that's for me. I want to be outside in the fresh air, cruising down the bumpy road of life, developing a bad back and a sunburn only on my left side.

Of course being a mobile locksmith has its pluses and minuses. For me, the biggest plus is not being involved in office politics. When I am working on a lock in an office setting, I will usually be treated to bits and pieces of the on-going drama by overhearing statements such as:

"It was my idea, but Susan took all the credit for it at the meeting until she found out that it had caused three fatalities, then she said she didn't have anything to do with it at all."

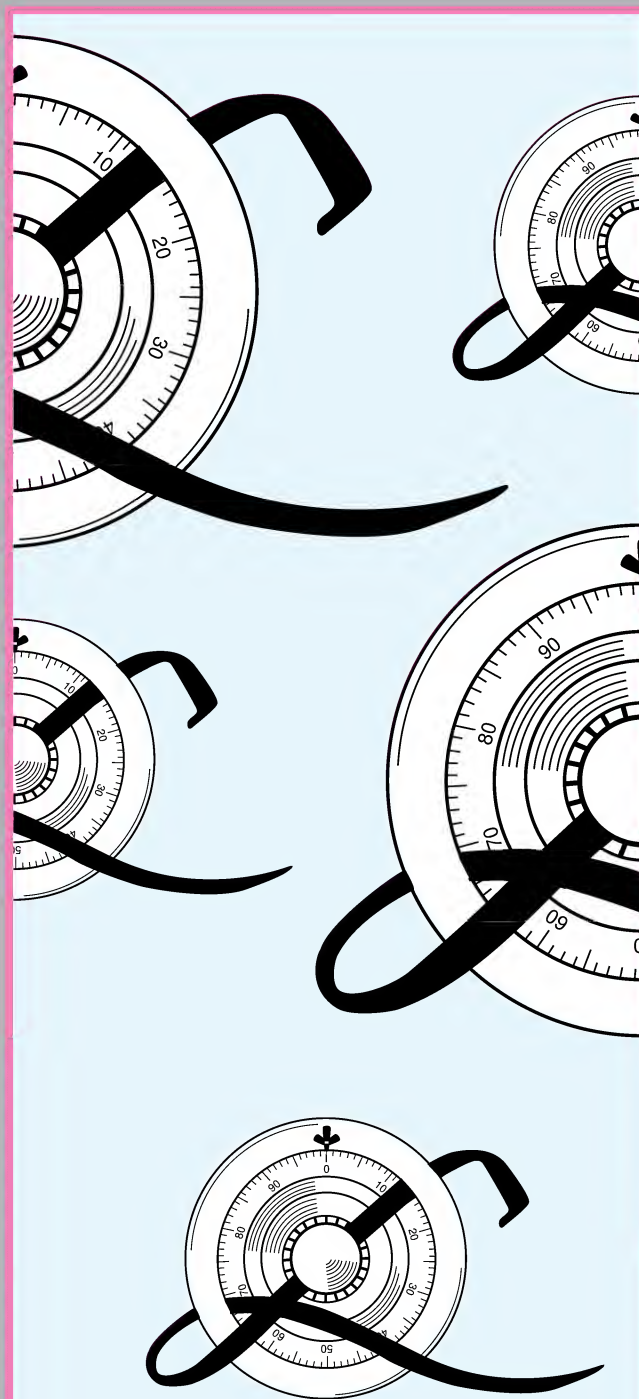
Being on the road also allows you the gratification of visiting your long past-due accounts and adding that personal touch. Like telling them: "Sorry but your account has been turned over to the Corleone Collection Agency. You'll soon be getting a visit from Anthony and Vinny, who will be inquiring about your method of payment, and whom to notified in case of emergency. Don't worry though, the locks I installed have been approved by the Americans with Disabilities Act."

Another good thing about being a mobile locksmith is the money. It's really pretty good if you own the business, keep your overhead low, and don't saddle yourself with alimony payments equal to the gross national product of a small Caribbean country.

I have no complaints. Or wait. Yes I do. I have lots of them. One disadvantage to being on the road is, when dealing with the public, you are sometimes driven to really need a couple of months out in the country with a set of finger-paints and a Mozart album. Mind you, most of my customers are normal, friendly people, but then there are the ones that make me wonder if there are lifeguards down there at the shallow end of the gene pool.

Every now and then I find myself checking the phone book to make sure the phone company hasn't mistakenly listed me under "Bozo Hotline." By the end of a busy week of dealing with the public, I would rather have my appendix removed with a weed-wacker than talk to one more customer.

The customers can be tough, but one of the real hazards of being a mobile locksmith is the way we eat. Now, I'm not a doctor, but the meals that are available for you to eat on the road can't be all that good for you. Your choices are: Jack in the Box lunch special, which is a heart attack on a French roll with bacon and cheese; or Burger King's meal deal, a



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Whopper coronary with fries and a coke; or McDonald's double bypass patty on a sesame seed bun.

My favorite eating establishment had a hickory-fired barbecue pit and special sauce that activates my salivary glands and closes down my main heart arteries just thinking about it. I would frequent this place when I felt too darn healthy and just couldn't deal with it. My favorite meal was something that, if the truth-in-advertising laws were to be strictly applied, would have to be called "petrified pork snout."

Pete, the owner, and I, had a reciprocal deal where I would mess-up his locks for him and he would provide me with all the intestinal problems I could handle. He would never reveal to me the secret ingredients to his special barbecue sauce, but I suspect that he also used that same sauce to clean the grease stains off his driveway and unclog his plumbing.

After having a meal at Pete's, you would notice a significant reduction in your basic motor skills, such as your ability to breath. To show his concern, Pete was always pretty good about helping his customers to their car after their meals. One day, after plopping me in my driver's seat and placing my hands on the steering wheel for me, I suggested to him that after every tenth meal, he might consider giving the customer a certificate for a free electrocardiogram.

He didn't listen though, and soon business died off. I believe the State of California is now considering legislation to outlaw driving under the influence of pork snout.

The other major hazard for a mobile locksmith, would be the risk of being on the road all-day and eventually running into a driver that is even less competent than yourself. Between the driving risk and the food, the chances of a mobile locksmith making it to the average male expiration date of 73 years, is about the same as Saddam Hussein winning the Pillsbury bake-off.

It's a fascinating world out there, and being a mobile locksmith gives you the chance to see some of it. Astute observer Ambrose Bierce once defined a road as, "A strip of land along which one may pass, from where it is too tiresome to be, to where it is futile to go." But what does he know?

It's the journey not the destination that counts. Benjamin Franklin warned us that, "With freedom comes responsibility." Again, what does he know?

Can't we choose freedom-lite, with only half the responsibility of regular freedom? The road offers the unknown and not yet seen, for which many of us have an unquenchable thirst. And as fortune would have it, thanks to an investment plan that would have been better managed by a committee of drunken sailors with a ouija board, it looks like I will be enjoying the sights of the locksmithing road for many generations yet to come. **TRIL**



The ~~W~~HITEP Side

"Having It All"



by
**Sara
Probasco**

"You're mighty quiet in there. What are you doing?" Don called from his office when we were working late, one evening.

"Contemplating murder," I replied.

"Do you have someone particular in mind, or is this just a generalized feeling you have?" he asked.

"I would love to strangle the guy who talked me into buying this new computer," I shouted. "I've been struggling with it for almost a month, and I still don't know what I'm doing."

"At least now you have something to blame it on," Don quipped.

I ignored him.

"Upgrading from my old 286 PC to this Pentium is adjustment enough," I complained, "but trying to master Windows '95 and WordPerfect 7 after working in DOS for eight years is driving me crazy."

I heard a muffled sound from Don's direction.

"What was that?" I asked.

"What?"

"I thought you said something."

"Not me."

Everything was quiet for a few minutes. Then Don asked, "What are you going to do with the old computer?"

"I'm planning to donate it to a worthy cause as soon as I'm sure this new computer is working right."

"You have doubts?" Don asked.

"Well, it has been acting rather strangely. Just yesterday, I was right in the middle of a letter to one of our suppliers when this display box dropped down from nowhere, asking me to make choices about totally unrelated things."

Don smirked. "You must have clicked on the wrong thing."

"That's just it: I didn't click on anything. I was using the keyboard. Ever since the hard disk crashed the second week we had this computer,

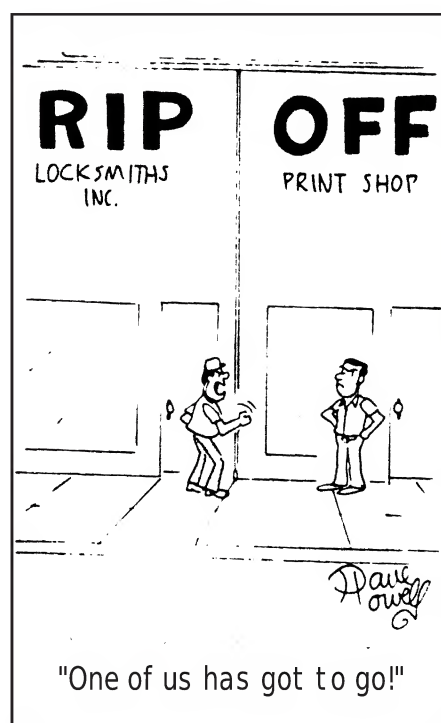
I've been super careful about things like that," I said.

"I thought Chuck said you didn't cause that, that it was a faulty hard disk."

"It was. But I'm not taking any chances. I sure don't want to have to spend another day transferring everything from the old computer into the new one again."

It seemed to me we'd had nothing but problems with this computer. Right away, a few glitches had meant sending it back for "adjustments" twice, resulting in the replacement of some of its innards. Then everything went haywire a week later, and they'd put in the new C-drive. It still wasn't working as I thought it should, but Don had convinced me I'd grown paranoid.

"You know, I don't understand why it takes twice as long to bring up WordPerfect for Windows '97 on this computer as it did to bring up my DOS version on the old one," I pouted. "I thought one of the advantages of the 586 was its speed."



"It is, once you get into it, but the Windows '95 version is a lot more complicated than DOS. It offers you so many more options, it naturally takes longer to bring up," Don explained. "No telling how long you'd have to wait if you had this program on the old computer."

I knew he was right, but that was part of the problem I was having trouble coming to terms with. Did I really need all those extra options? The more I worked with Windows '95 and the more I learned about the Internet, the more convinced I became that I didn't need all these "advantages" and possibilities. The people I knew who touted them obviously had more spare time to play around than I did.

"You just have to make up your mind to enjoy the change," Don advised. "It is different."

"So is tofu, but that doesn't mean I like it."

"Look at it this way," he patiently tried to explain, "it's like the difference between shopping at the corner grocery or the Mega-Marketplace."

"You lost me," I admitted.

"At the Mega-Marketplace, if you want a loaf of bread, you have a lot of choices. They have cracked wheat, sprouted wheat, multi-grain, wheat bran, oat bran, rye, pumpernickel, potato, salt rising, sourdough, cinnamon-raisin swirl, Italian, French, sliced, unsliced. That's the way the new computer programs are. You have all these wonderful options to choose from."

"I enjoy shopping at the little corner grocery."

"But your choices are so limited there. All they have is white bread or wheat, period."

"Sure makes it simple. Besides, what if all I want is plain bread? At Mega-Market, it takes me thirty minutes to park my car, get inside, and find the bread counter. Another

fifteen minutes is wasted looking through the hundred-and-one options to find the bread I want. Then I spend thirty more minutes waiting in line to get checked out and then finding my car," I pointed out.

"Now that I can have it all, I feel a real pig-out session coming on."

"You're missing the point," Don said, growing impatient.

"Not really. It was your illustration. I'm just expanding on it. As you pointed out, this new computer system is like the overflowing bread counter. The point is, a lot of times all I really want is just a quick loaf of plain bread."

Don shook his head. "You're living in the dark ages," he said.

"Maybe. But at least I know where the candles are."

When I came into the office the following Monday, I turned on the computer and was surprised to see a new icon on the menu. It was my old WordPerfect 5.0 for DOS. I felt like I'd found a lost friend.

"What's this?" I asked Don.

"Oh, just a little something I had Chuck come in and do for you. He said if you don't want the delay of booting up Windows to get to your old program, he can bring you in through DOS and make Windows '95 an option."

"I had no idea he could do that," I confessed.

"He can start you with a plain-Jane menu listing on a dark screen, if you want. That way, you wouldn't have all the distractions of the Mega-Market to contend with." Don waited for my response. "Shall I call him back over and have it changed?"

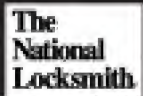
I looked at the colorful display of options before me. Icons for various games and programs illuminated the screen, inviting me to try them.

"Well, not just yet," I said, eyeing first the new, plain-Jane icon, then the bright array surrounding it. "Now that I can have it all, I feel a real pig-out session coming on." **TNL**

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California Fire Storm

Walls of fire stormed the landscape leaving behind the charred remains of warped and twisted safes.



by
Carl Cloud

A row of ten stately homes lined the rim of a plateau which viewed a grass valley that swept up to the nearby foothills. A small elite community where architects played with their imaginations in the creation of dream homes. Each home was unique. Each had a character portrayed by its proud owner. In less than three hours all ten beautiful homes was destroyed by fire.

It is the season of the Santa Anna winds in southern California. A change in nature when the balmy onshore breezes shift. A low atmospheric pressure cell forms along the coast line and the warm air of the desert is drawn over the mountain's westward. As the winds plummet down from the mountain slopes, the speed increases and the humidity can drop to a single digit. The winds become very strong, hot and dry. The ground has not tasted the refreshing rain for more than five months and vegetation is dry and parched. It is

the setting for the California fire storms.

Home owners watched as the placid valley become a racing infernal being fanned by sixty mile-an-hour winds. The flames of orange, yellow, reds and brown had a backdrop of black and gray billowing clouds of smoke. The clear sunny day was becoming a twilight of gray. A wall of flame a mile wide raced up the slopes of the valley. Ten homes stood in its path. A paved street was the only fire break.

A wall of flame arched over the street as a gigantic wave. It cleared a row of forty foot high trees and crashed down on the homes, exploding them into a huge ball of fire. There was no way to fight the onslaught. The gigantic wave of ravenous flame was too quick and all encompassing. A total of 104 homes within San Diego County were reduced to rubble and ash during the three days of fire storms (see Photograph 1).

Some residents had safes within their homes. They could only watch and pray that the contents of their safe would be saved. Some contents survived and some did not. The remnants of the first safe was an older double door unit. Debris from the second floor had crashed down and was laying precariously on top of the safe (see Photograph 2). A four drawer

insulated file standing next to the safe had done its job. All of its items were retrieved, a little warm, but undamaged.

The condition of the contents within the safe were questionable. I doubted that this non-labeled container would even afford much protection when new! These older safes usually had the doors and walls filled with a combination of Portland cement, plaster, Gypsum and good old Asbestos fibers. The insulation acted as a fire barrier, but didn't stop the heat from cooking everything inside.

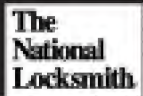
The home owner had sprayed oil around the dial, handles and hinges, hoping to get something freed. He had tried the combination with no luck. He said the dial turned freely to the left but would bind when turned to the right. As I turned the dial left, it was moving out from the door. In fact it threaded itself right out of the drive cam. There was no sign of a spline



1. A home owner shifts through ashes seeking to find pieces of yesterday's dreams. A row of naked chimneys marks the location of his neighbor's homes.



2. A double door safe partially covered by debris from the collapse of the above flooring.



3. A square hole was cut through the door between the dial and handle.

key. Maybe it melted away, I don't know.

The skin of the safe was scorched, buckled and bowed. The entire safe was twisted slightly out of square. There was no movement or play in the doors and the handles wouldn't move. It was like every part had swollen and



4. All of the contents of the insulated file cabinet and safe were saved — almost.

bound in place. There wasn't any electricity to be had anywhere in the area either. A run back to town for a portable generator was within reason, but I opted for brute force as a first attempt to open the safe.

Photograph 3, shows our method of entry. With a wood chisel and hammer,



5. Although wood and paper were not scorched, the computer disk had begun to melt.

a four by three-inch hole was cut into the door between the dial and handle. I was amazed how easily the door skin sliced to form the opening. It only took a few minutes to expose the lock bolt and handle cam. A short pry bar forced the cam around and we watched the handle move to the open position. It still took some prying on the doors opening edge to inch the door open. The left door was equally as difficult. By using pry bars, tugging and straining, the door slowly creaked open.

I was truly surprised. The contents of the safe was undamaged (see Photograph 4). The interior was blacked and scorched, but all of the

Continued on page 108



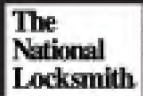
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Continued from page 106

6. Two Mosler fire resistive safe. One safe wasn't locked and the door had swung open.



drawers rolled out with the contents intact. Only one item did not survive. Setting on shelf was a bundle of three and one-half inch computer disk (see Photograph 5). As you can see, heat within the safe had deformed the disks, however, the rubber band holding them together hadn't even begun to melt! Interesting.

This is why there are Data Safes rated at one hundred twenty-five degrees for the protection of computer disks. A standard fire safe will not protect computer data material. The owner of the home was a business man and the disks were

backup copies of his company's records. He had good intentions but poor protection.

Another pair of safes within the area were old Mosler record containers (see Photograph 6). These key operated units had an unique door design. When the door was opened to ninety degrees, it could then be pushed back into a pocket within the safe body. A row of these safes could be standing open without a door blocking the safe next to it. The owner said the door of the safe on the right, had blown open during the fire. I really doubted that possibility. I believe the safe was left unlocked.



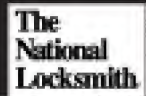
7. The locking bars moved outward in all four directions.

These safes were of a very light metal construction. Note the warp to the right body edge of the left safe. Photograph 7, shows the design of the locking bars. When the safe

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8. The pried open door revealed no interior damage.



9. The charred remains within the drawer of a non insulated file compared to a drawer in the Mosler Safe.

handle is turned, locking bars move out on all four sides of the door. The bars are retracted to the open position in the photograph. A groove can be seen in the door frame to receive a locking bar.

Opening this locked safe became a bit of a challenge. The home owner furnished a key to unlock the handle — but the handle refused to move. The door had a visible inward bow that can be seen in *Photograph 8*. I could picture having to drive back at least three of the locking bars to open the safe. I started with my trusty wood chisel and hammer by cutting a square out of the top, near the front edge of the body. Again, the metal sliced very easily. The opening of the hole showed the edge of the top bar. A good whack of a hammer on a punch moved the top bar down. I was hoping

the movement would also retract the other bars. No such luck.

A square cut out, half way down the left wall can be seen in *Photograph 8*. I punched the exposed bar and nothing happened. I punched the bar so much that it began to mushroom over. It wasn't going to move. Hummm, what now? I have seen pictures of safe that had been 'peeled' by burglars, so I sliced a slot across the top left corner of the door and started prying the door face away with a crow bar.

Breaking out the insulation as I pried from the corner down the edge of the door, I was able to see the side locking bar. As I worked down the edge of the door, I could see the locking edge of the bar. Apparently the bar was in a partially locked position— loose at the bottom of the door, still extended at the top. A pry bar leveraged the locking bar back and the door slightly gapped. By working the pry bar down the door, it finally cracked open.

Once opened, I was again surprised. This old safe had an SMNA file label, which meant it had to have been built prior to the early fifties, protected its contents. The drawers didn't show a sign of heat or smoke damage. *Photograph 9*, shows the difference of the drawer contents between the non insulated file cabinets and the Mosler safe. The contents of five, four drawer and eight, two-drawer non insulated file cabinets was destroyed at one house site.

This is a time the home owner will never forget. They will persist however, and build their dream homes again. Hopefully this time, with more knowledgeable in the storage and preservation of their cherished items. **TNL**

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KEY CODES

Auth Electric Series H0001-H3000 - Part 2

HPC 1200CM

Code Card: C26

HPC Cutter: CW-1011

Framon:

Cuts Start at: .191

Spacing: 125

Block #: 1

Key Blanks:

Original - H20

Ilco - 1003M

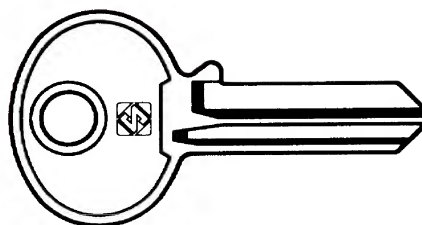
Silca - BOR1R

Curtis - CO106

Cut to Cut Spacing: 125

Number of Cuts: 5 for operating key.

Gauged: Bow to Tip



CO106
(BOR1R)

Spacings:

1.	.191
2.	.316
3.	.441
4.	.566
5.	.691
6.	.816

Depths:

0.	.290
1.	.272
2.	.254
3.	.236
4.	.218
5.	.200
6.	.182

CODE#	BITTING	1031	26554	1062	20134	1093	33045	1124	42240	1155	45052
1001	42404	1032	04262	1063	13353	1094	26332	1125	32163	1156	66314
1002	15463	1033	34301	1064	21430	1095	64136	1126	11315	1157	53155
1003	30125	1034	52034	1065	55023	1096	41652	1127	52321	1158	12236
1004	24132	1035	02532	1066	24336	1097	35241	1128	45436	1159	55043
1005	44150	1036	34614	1067	50254	1098	16125	1129	35023	1160	04622
1006	61252	1037	16303	1068	46330	1099	32650	1130	61032	1161	02134
1007	56616	1038	63414	1069	51335	1100	52632	1131	12414	1162	56305
1008	11265	1039	42356	1070	30503	1101	01654	1132	15201	1163	61630
1009	56143	1040	55313	1071	31625	1102	62020	1133	04312	1164	54614
1010	14212	1041	16212	1072	62240	1103	00350	1134	02264	1165	04132
1011	51153	1042	50103	1073	45014	1104	54541	1135	53553	1166	40134
1012	33625	1043	22026	1074	32616	1105	41032	1136	46316	1167	23612
1013	10256	1044	15021	1075	04640	1106	66136	1137	64314	1168	11263
1014	31261	1045	66202	1076	36165	1107	20424	1138	44152	1169	66310
1015	23630	1046	36123	1077	46532	1108	63230	1139	52056	1170	15151
1016	32541	1047	13005	1078	54301	1109	26316	1140	65214	1171	24154
1017	42446	1048	43036	1079	32105	1110	55115	1141	12325	1172	61030
1018	51661	1049	65632	1080	46640	1111	23052	1142	02640	1173	03454
1019	46354	1050	35043	1081	53515	1112	34363	1143	33403	1174	53201
1020	32034	1051	14161	1082	44264	1113	12054	1144	62314	1175	31645
1021	15045	1052	01650	1083	34010	1114	50301	1145	16232	1176	02040
1022	64354	1053	42424	1084	56321	1115	61436	1146	35643	1177	63654
1023	50210	1054	62446	1085	01054	1116	15405	1147	62466	1178	33225
1024	04356	1055	23032	1086	45430	1117	10361	1148	52301	1179	52363
1025	14521	1056	33155	1087	55421	1118	50456	1149	36523	1180	05632
1026	25652	1057	04020	1088	36301	1119	36541	1150	20114	1181	15465
1027	14325	1058	33461	1089	56414	1120	35203	1151	13441	1182	66330
1028	22420	1059	45030	1090	20226	1121	50143	1152	22042	1183	25016
1029	10216	1060	14452	1091	05232	1122	21014	1153	04334	1184	44352
1030	05052	1061	54216	1092	25456	1123	15041	1154	44516	1185	36416



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1186	62114	1197	22642	1208	45404	1219	36125	1230	66404	1287	51243
1187	56612	1198	05634	1209	26426	1220	11641	1231	32432	1288	16145
1188	51155	1199	44530	1210	16163	1221	00336	1232	16563	1289	20334
1189	01250	1200	50234	1211	55441	1222	53315	1233	32016	1290	52503
1190	52252	1201	35405	1212	35005	1223	40154	1234	53103	1291	62040
1191	02356	1202	11623	1213	40556	1224	31025	1235	15245	1292	32363
1192	54525	1203	46130	1214	26110	1225	43436	1236	45210	1293	03410
1193	64352	1204	32416	1215	13225	1226	53641	1237	26442	1294	46246
1194	43656	1205	56161	1216	35441	1227	20532	1238	65030	1295	32412
1195	50432	1206	01044	1217	14430	1228	56634	1239	42642	1296	10165
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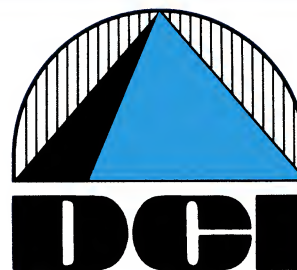
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1282	61452	1339	16434
1283	30163	1340	33003
1284	66336	1341	54656
1285	02004	1342	14561
1286	41414	1343	11043



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1398	02626	1456	16345								
1399	04514	1457	26642								
1400	61634	1458	50365								
1401	20264	1459	62530								



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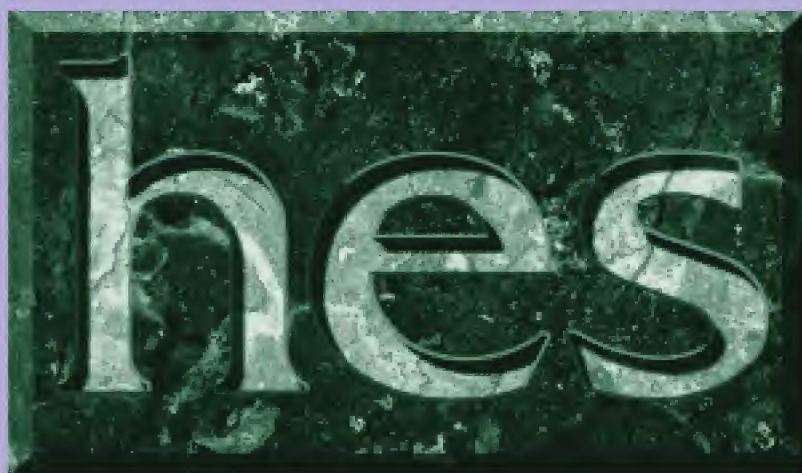
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1509	55663	1566	35351	1623	50034	1680	64246	1737	43054	1794	46116
1510	51553	1567	15203	1624	23656	1681	16165	1738	04150	1795	66312
1511	44532	1568	42536	1625	30410	1682	32161	1739	62352	1796	36250
1512	14541	1569	53621	1626	55311	1683	25432	1740	15443	1797	42550
1513	36232	1570	02426	1627	16505	1684	56652	1741	50036	1798	12032
1514	54256	1571	46402	1628	22664	1685	33643	1742	65012	1799	50450
1515	24624	1572	12214	1629	45036	1686	66332	1743	36545	1800	25012
1516	13245	1573	31403	1630	23430	1687	15155	1744	03450	1801	12612
1517	55131	1574	40534	1631	04642	1688	04332	1745	13265	1802	54650
1518	31621	1575	56145	1632	62242	1689	24642	1746	56650	1803	01614
1519	02554	1576	26624	1633	30303	1690	11205	1747	41036	1804	36432
1520	32125	1577	63612	1634	13263	1691	33203	1748	22464	1805	14412
1521	32654	1578	30416	1635	52121	1692	56610	1749	32521	1806	44134
1522	16123	1579	15641	1636	34541	1693	34254	1750	05256	1807	32050
1523	05234	1580	35625	1637	23252	1694	44156	1751	41250	1808	02404
1524	33263	1581	10345	1638	45630	1695	32454	1752	61414	1809	55045
1525	22134	1582	40536	1639	40512	1696	52521	1753	26226	1810	46112
1526	16252	1583	14365	1640	32143	1697	04402	1754	63212	1811	10343
1527	54163	1584	34612	1641	42130	1698	54323	1755	33021	1812	46534
1528	30341	1585	02246	1642	15223	1699	61216	1756	41014	1813	30250
1529	02534	1586	01432	1643	05214	1700	14650	1757	46332	1814	62550
1530	25616	1587	35115	1644	50345	1701	36563	1758	66426	1815	03656
1531	42532	1588	62642	1645	43630	1702	53463	1759	24550	1816	63052
1532	12250	1589	53353	1646	52214	1703	24550	1760	16523	1817	41016
1533	45012	1590	64024	1647	12456	1704	03054	1761	42556	1818	32303
1534	13465	1591	36321	1648	30343	1705	13531	1762	33623	1819	15545
1535	54452	1592	44552	1649	03016	1706	51331	1763	34414	1820	50250
1536	02642	1593	36543	1650	30052	1707	02264	1764	56210	1821	42624
1537	66536	1594	44046	1651	36343	1708	50165	1765	22046	1822	26356
1538	42512	1595	53351	1652	10505	1709	65652	1766	11533	1823	66552
1539	16343	1596	26202	1653	21214	1710	34143	1767	61034	1824	50056
1540	62510	1597	56521	1654	55661	1711	03434	1768	22330	1825	04554
1541	32052	1598	32612	1655	02350	1712	33135	1769	32254	1826	32256
1542	12430	1599	46242	1656	10254	1713	64040	1770	12052	1827	54010
1543	54634	1600	34525	1657	13355	1714	25012	1771	64316	1828	14343
1544	63016	1601	32543	1658	03612	1715	26556	1772	11351	1829	50054
1545	33441	1602	24242	1659	35621	1716	43030	1773	24246	1830	43430
1546	04354	1603	20332	1660	64042	1717	00534	1774	50305	1831	15665
1547	52612	1604	51201	1661	42510	1718	14345	1775	04022	1832	35533
1548	20350	1605	45416	1662	33665	1719	35531	1776	30210	1833	52234
1549	35045	1606	13463	1663	45232	1720	45412	1777	25036	1834	34212
1550	66246	1607	63634	1664	54230	1721	53643	1778	11405	1835	02266
1551	41430	1608	16214	1665	25654	1722	22510	1779	50565	1836	32523
1552	36434	1609	53511	1666	64356	1723	15113	1780	26334	1837	64512
1553	11463	1610	31243	1667	12654	1724	46262	1781	62442	1838	32010
1554	22462	1611	11513	1668	35535	1725	54523	1782	41456	1839	55331
1555	31533	1612	02042	1669	43612	1726	41054	1783	62554	1840	43632
1556	04464	1613	61256	1670	52565	1727	35201	1784	12030	1841	66114
1557	51425	1614	50323	1671	42440	1728	05456	1785	53025	1842	56103
1558	36145	1615	34054	1672	24512	1729	64554	1786	36430	1843	31223
1559	46352	1616	52210	1673	01234	1730	41412	1787	51551	1844	02204
1560	14634	1617	02512	1674	55133	1731	14432	1788	63032	1845	24156



Continued from page 114

Auth Electric Series H0001-H3000 - Part 2

1846	34452	1857	13201	1868	14456	1879	04422	1890	10525	1947	20132
1847	21256	1858	02312	1869	22154	1880	21456	1891	24264	1948	63616
1848	36654	1859	16416	1870	62532	1881	13553	1892	56541	1949	11445
1849	14145	1860	44002	1871	35133	1882	25410	1893	20550	1950	53355
1850	51423	1861	05654	1872	01430	1883	55151	1894	66132	1951	05656
1851	40354	1862	33153	1873	22640	1884	30545	1895	12454	1952	42554
1852	46530	1863	55423	1874	24112	1885	15133	1896	64550	1953	11423
1853	02334	1864	64426	1875	42420	1886	54410	1897	15423	1954	52032
1854	16121	1865	02244	1876	50521	1887	22624	1898	51221	1955	22356
1855	52303	1866	33001	1877	66464	1888	65610	1899	30434	1956	03212
1856	45054	1867	40516	1878	35243	1889	35521	1900	14523	1957	66402



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1901	03032	1958	10450
1902	63656	1959	16545
1903	12616	1960	44114
1904	64332	1961	24002
1905	45230	1962	35331
1906	62626	1963	66204
1907	12634	1964	23452
1908	36652	1965	51643
1909	04556	1966	14034
1910	30305	1967	53115
1911	54654	1968	50454
1912	51133	1969	36216
1913	34563	1970	53135
1914	61056	1971	63010
1915	13641	1972	42264
1916	52016	1973	23632
1917	36361	1974	44040
1918	30054	1975	34325
1919	31313	1976	41654
1920	25412	1977	24134
1921	50052	1978	52365
1922	05210	1979	16101
1923	30056	1980	54436
1924	41630	1981	45050
1925	14056	1982	33465
1926	52654	1983	13665
1927	22024	1984	03414
1928	33131	1985	62316
1929	50161	1986	12145
1930	13133	1987	56630
1931	31023	1988	42516
1932	54632	1989	64312
1933	66424	1990	10545
1934	36450	1991	45612
1935	51625	1992	64154
1936	21054	1993	14016
1937	11661	1994	52561
1938	30323	1995	34456
1939	52412	1996	22424
1940	45250	1997	02440
1941	11465	1998	35113
1942	32012	1999	53133
1943	13533	2000	42354
1944	36325		
1945	63210		
1946	46334		

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by **Jake
Jakubowski**

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How to enter

Simply send in your tip about how to do any aspect of locksmithing. Certainly, you have a favorite way of doing things that you'd like to share with other locksmiths. Write your tip down and send it to: **Jake Jakubowski, Technitips Editor, The National Locksmith, 1533 Burgundy Parkway, Streamwood, IL 60107** or send your tips via E-mail to the E-mail address posted in the box below. You may win cash or merchandise. At the end of the year, we choose winners for many major prizes. Wouldn't you like to be a prizewinner in 1997? Enter today!

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Use the Internet address
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If your tip is chosen as the best tip of the month, not only do you win the All-Lock A-6200 Auto Service Kit, but you also automatically qualify to win one of the many excellent year end prizes!

Every published tip wins

Yes, every tip published wins a prize. If your tip is printed, you'll win \$25 in Locksmith Bucks. You can use these bucks to purchase any books or merchandise from *The National Locksmith*. Plus, be ready for Jake's Grab Bag prizes! Remember, everyone wins. (Please remember to include your complete mailing address - we cannot mail prizes to P.O. Boxes.)

Every year, since I can remember, *The National Locksmith's* Technitips column has offered thousands of dollars in prizes, locksmith bucks and merchandise. This year, those prizes will total in the tens of thousands of dollars! 1997 will without a doubt, be the biggest prize year in the history of this column, and we ain't finished yet!

To make the pie even more appealing, Slide Lock Tool Company, Mark Bates Associates and Aero Lock are coming on board offering monthly prizes and/or year end prizes.

Much work and a tremendous amount of effort has been put forth to continually upgrade and improve this column every year. Of course, our prize contributors deserve a lot of thanks for the generosity they have shown in providing the prizes that we give away each month and at the end of every year.

As I've said in the past however, without you, none of this would be possible. At least, not for very long. So, you guys and gals keep sending me your tips, tricks and ideas, and I'll keep trying to get you bigger and better prizes each year. In fact, if you watch next month's column real close, you'll see even more new prize contributors listed!

Now here's a challenge for you. I DARE YOU — each one of you — to sit down and send me a tip this month. After all, what do you have to lose?

Y'all heah what I'm sayin' now?

ALL LOCK WINNER: Key Generation For Mercedes

If you work on Mercedes, you know how difficult it can be to generate an ignition key for these cars. Here's a trick that I have been successfully using to make keys for the high-security, non-alarmed

Mercedes-Benz. I have found this tip to be useful on many of the newer SL models as well.

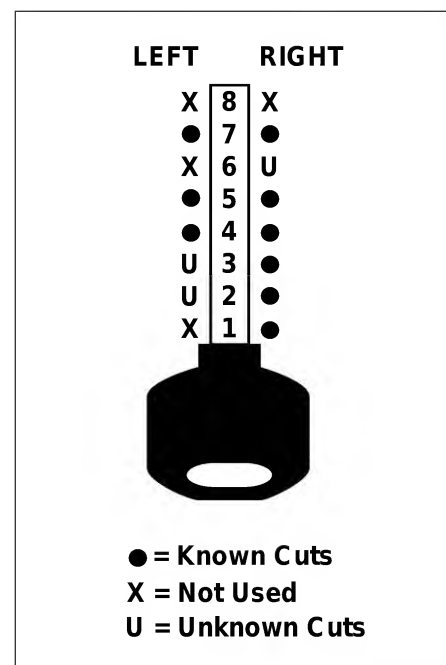


Illustration 1a.

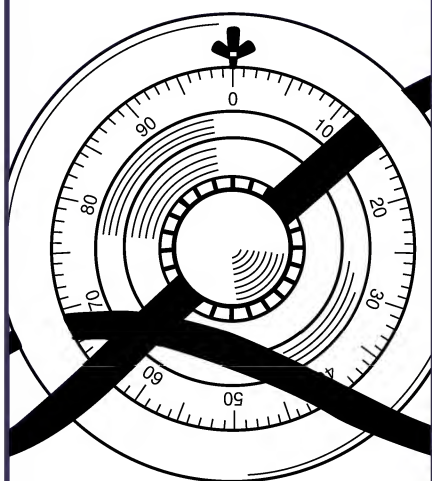
Continued on page 120



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Continued from page 118

First start at the door and make a door key. The door key is easy to produce and will also operate the trunk and glove box. Once you have completed the door key, you will have known cuts in positions shown in *Illustration 1a*. The "•" represents the known cuts determined from the door lock. "X" represents the cut positions not used in either the door or ignition. "U" represents the "Unknown" tumblers which are in the ignition. These are the three cuts that are needed to complete the key.

In the ignition lock, space cut number six on the right is a whole tumbler. Spaces two and three however, are split tumblers. If you try to impression the three unknown tumblers (6R, 2L and 3L), the result will usually be a damaged lock caused by a bent or broken tumbler.

Here's where my tip comes into play. The keyway on the ignition is wide open, with no obstacles at all. You can clearly see the first few tumblers in the ignition. If you look straight into the ignition lock to locate the first tumbler, space number 1L will be located at the top of the keyway on the left, as shown in *Illustration 1b*. Keep in mind that this lock is a bi-directional lock, so the spaces will alternate from top to bottom.

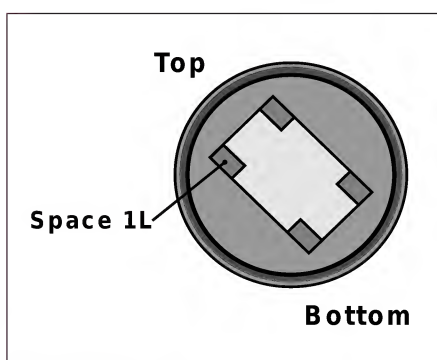


Illustration 1b.

Space position 2L will be on the bottom of the keyway to the left. You already know the depth of 2R which was in the door lock. With the known depth of 2R determined, you can sight read the unknown depth of the 2L position by comparing it to the 2R depth reading (see *Illustration 1c*).

Space 3L will be the tumbler on the top right of the cylinder. Sight read it as you did space 2L (see *Illustration 1d*).

Now that you have all your known

cuts except for space 6R, all you have to do is progress 6R one cut at a time until your key turns the ignition.

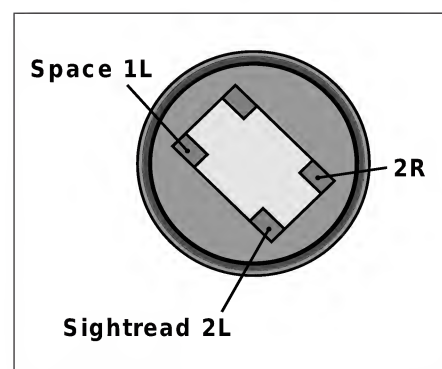


Illustration 1c.

Note that on occasion, I have started to do this procedure and have found that space 1 in the ignition will be on the bottom right. That would mean that 2L was located on the top right of the cylinder and 3L was located on the bottom left.

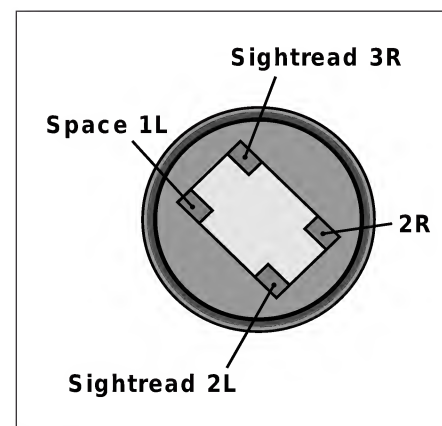


Illustration 1d.

Regardless, keep in mind your tumbler locations and sight read space 3L and 3R. Then just progress 6R until you have an easily working key.

Tom Tusing
Florida

AERO LOCK TRYOUT KEY WINNER: **Blinded by The Light**

Rain, snow, bright sunlight (and often just day light) frequently make it difficult to see inside door cavities — even with the brightest of inspection lights. Snow, sleet and rain are distracting when running down your collar or pounding against the door that you are working on. Sunlight often reflects so brightly off the window or painted surfaces of the car that you are nearly blinded.

To compound the problem, tighter

fitting window seals on both foreign and domestic automobiles can add to your frustration and prolong your opening time per vehicle. I have dramatically reduced my time per opening by putting together a very inexpensive kit.

First, I purchased a black fabric shower curtain. Next came six "cow" magnets that I picked up at a farm supply store. You can use any type of small craft magnets to accomplish your purpose. Then I bought a 10" X 14" molded plastic utility case at a discount center to carry everything in.

Now, if the sun is extremely bright, or the weather is inclement (rain, snow, etc.) I simply place the top edge of the shower curtain on the roof of the vehicle I'm attempting to open, and use the magnets to hold the shower curtain in place.

Now I can duck under my "opening tent," and do not have any rain or snow running or blowing down my neck. It is also dark enough for my inspection light to illuminate the inside of the door cavity with no overriding glare from a bright sun.

Grant P. Mitchell
New York

STRATTEC RACING JACKET

WINNER:

Removing Front Splined Yale Dials

A recent safe opening job required me to open a Remington Rand,

double door, record safe. This safe had a Yale lock with a removable, threaded dial. On the front of the dial is a removable threaded hub with "Yale" inscribed on it. Underneath this hub is a spline key. If this spline key is broken flush with the spindle, as it was in this case, it can still be removed.

To accomplish the removal of this spline to drill under the dial instead of outside the dial, I did the following:

First, I center punched the spline key. With a small drill bit, I slowly drilled through the spline key within

the spline key groove of the spindle (see *Illustration 2*). Once I drilled through the spline key,

At this point the spline key is drilled completely in half so it could be fished out easily.

To unscrew the dial, I drilled a small, shallow hole in the end of the dial spindle. Then, using a small, hard-tipped screwdriver, I gently tapped the tip of the screwdriver into the hole that I had just drilled. Holding the screw driver tightly, to keep it from turning, enabled me to unscrew the dial from the spindle.

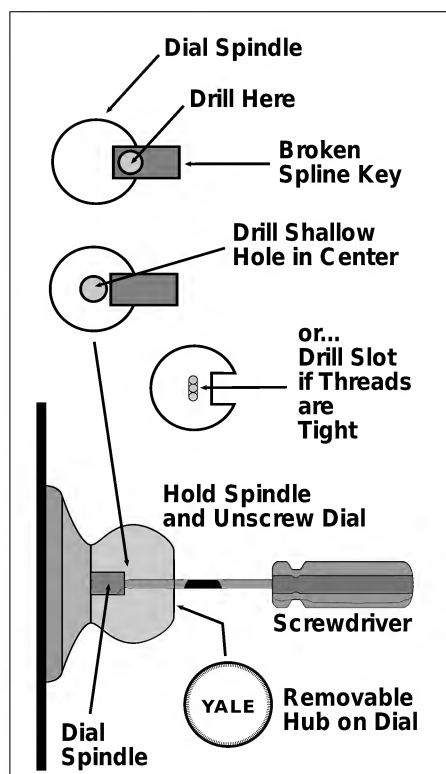


Illustration 2.

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Once the dial was off, it allowed me to drill my opening hole under the dial ring.

Chuck Frazier
California

**HPC PISTOL PICK WINNER:
V.A.T.S. Decoding**

I am constantly amazed at the quality of the tips that are published in your column from creative locksmiths around the country. A prime example was one recent tip dealing with the bypassing of a V.A.T.S. decoder when generating a V.A.T.S. key. I would like to give some input on that idea.

My first step in servicing a V.A.T.S. is to disconnect the battery terminal(s) before removing the steering wheel, whether the car is equipped with an air bag or not.

While removing the ignition, I try to be very careful when taking the ignition out since the thin wires attached to the lock can be easily broken. I have found that it's best to get behind the knee bolster and loosen up the V.A.T.S. wires putting less strain on the V.A.T.S. harness.

I have found that it is a good idea to "support" the ignition in some

manner (a piece of electrical tape can work very well) to avoid damage when the lock is "hanging" from the harness.

At this point I reconnect the battery terminals and insert a keyblank in the ignition while it is still attached to the harness, and secured from falling by the tape. Starting with a number six resistor key blank, I work my way up to fifteen (observing the three minute rule). If I do not find the correct resistor value, I then go from the five resistor down.

Each time I insert and try a key blank, I try to "crank" the vehicle. However, rather than use an alternate ignition, I use a small pair of needle nosed pliers to turn the ignition system to the "On" position. I find that by using the pliers, there is far less chance of damaging the delicate wiring in the steering column.

Once I have determined the proper resistance value, I can either cut a working key by code, or disassemble the lock and decode it for the cuts to make an operating key.

Bob Galick
Pennsylvania

**SARGENT AND GREENLEAF
WINNER:
Shim Picking American
Padlocks**

I finally found a way to salvage and rekey those American padlock cylinders which were cluttering the bottom of my padlock toolbox. These were all cylinders which for one reason or another, I did not have keys. I had tried in the past to pick them or shim them in the conventional way and had very limited success.

Here's the easiest way I have found to do this job:

Place the cylinder in a vise with the front of the keyway at a slight downward angle. Use a broken key extractor or pick which has been thinned down somewhat and squared off at the end (see *Illustration 3*).

Starting at the rear of the cylinder, use the modified pick to push the pins down through the pin holes at the bottom. At the same time, put very light pressure on the shim and wiggle the tool from side to side. You will be surprised at how much easier the cylinder shims as opposed to using a key blank.

Once you have "picked" all but the

first chamber, remove your "pick" and insert a key blank into the keyway. Then just wiggle the blank back and forth until the plug turns slightly. Once the plug turns, remove the shim from the back of the plug and replace the clip retainer to keep the plug from coming out of the cylinder.

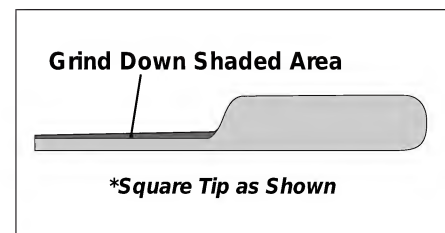


Illustration3.

All you have to do then is rotate the plug, dump the pins through the bottom of the plug and rekey the cylinder in the usual manner. This proved to be a much faster method of picking these cylinders for me.

Garth Meredith, CJL, CRL
Canada

**A-1 SECURITY PRODUCTS WINNER:
Jumping Trunk Locks**

When called to retrieve the keys from the trunk of a 1995 Cadillac Concours, I immediately looked for the trunk release button in the glove compartment, which was located next to the headlight switch. Both the headlight switch and the trunk release button are mounted on an access panel which pops out of the dash. The plug at the back of the trunk release button had four wires running from it.

Using a jumper from the battery, I touched all four of these wires without opening the trunk. What I did manage to do was short out the power supply to the radio. However, I did find that on the back of the headlight switch, there are about fourteen wires coming off of the panel, and I found that by touching the white wire (the third one down on the left side of the panel) the trunk opened.

Fortunately the customer was not unduly upset about the radio and told me he was taking the car in for service the next day anyway and would just add that to the list.

Just remember that the white wire on the larger plug is the one to use.

Dan Nave
Pennsylvania

[Editor's Note: Dan, although I've used similar trunk opening techniques

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on older cars with electric trunk releases, I've stopped using the method on the newer cars (from about the mid-to-late 80's to present) because of the sensitive nature of the electronics and computer driven systems on these cars. It's just too easy to "spike" or blow a system, which could open you up to liability for a healthy repair bill. On any of the newer models with an electronic trunk release, I recommend progressing from the glove box or calling Cadillac Roadside Assistance at 1-800-882-1112.]

**SILCA KEY BLANKS WINNER:
Smooth Cutting Lexan**

An elderly relative wanted me to substitute single cylinder deadbolts for the double cylinders that she had on her doors. Since the doors had the "French type" panes of glass (about 6" x 9") I was concerned about her security since anyone could just break the glass, reach in and unlock the door.

I decided to replace the glass with quarter inch thick Lexan. My problem came in when I tried sawing (with a jigsaw) the Lexan into the proper sized panes. As I would cut through the Lexan, the hot material on each side of the blade would "close" behind the blade and seal. It made cutting the panes difficult and the cut edges looked terrible.

To solve this problem, I got a Windex spray bottle and filled it with water and sprayed water just in front of the blade as I was cutting. What a difference! The Lexan stayed cool and the cuts came out very smooth and neat.

Eugene Haywood
New York

[Editor's Note: Eugene's tip will work well when cutting any type of plastic material. When you cut clear plastic like Eugene did, and the edges are "cloudy," get a Bernz-O-Matic propane torch. Holding the torch a few inches away, "sweep" quickly up and down the edge a couple of times. This will "clear" the edge. But! Don't linger too long or you can melt the Lexan]

**PRO LOCK PK 15 PROFESSIONAL
PICK SET WINNER:
Opening Ford Vans With An
Antenna**

Illustration 4, shows a tool that I have made from an old automobile antenna for opening the newer Ford Vans with the license plate on the right rear door.

As you can see from the illustration, I put a 90 degree bend in

the thicker part of the antenna about four inches from the end. Then I bend a loop in the end to act as a handle. Next, I measured thirteen inches up from the 90 degree bend and bend the material about 10 degrees in the opposite direction of the "handle."

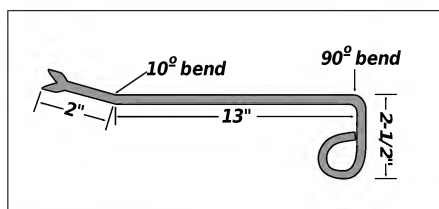


Illustration 4.

Now measure two inches from the 10 degree bend and cut the excess material off. Flatten the end and file a "V" in the end as shown.

To use the tool, remove the license plate lamp and angled the tool toward the left side of the door. Feel for the vertical rod and grasp with the "V" groove in the tool (watch the button for movement) and push up with the tool.

Jay Mischo
Utah

**TECH TRAIN TRAINING VIDEO
WINNER:
Recording Key Codes**

A few years ago, I began writing

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key codes and the type of blank used, on the backs of my business cards when I generated new keys for customers. This was to help the customer in case they lost their keys, and it also helped me since it gave the customer a reason to keep my card.

Auto Code _____
Key Blank # _____
Home/Office Code _____
Key Blank # _____

SAFE COMBINATION	
L _____	R _____
R _____	L _____
L _____	L _____
R _____	L _____
L _____	R _____

Illustration 5.



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I got enough repeat business from these "code cards," that I had the printer set the card up so that I could record the information on the back of the card (see Illustration 5).

My customers seem to appreciate it and I had one lady come back for three sets of keys. When I asked her why she didn't have duplicates made, she said: "Oh! I know all I have to do is bring you your card and you can make me new ones!"

Bob Hoyt
Pennsylvania

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PULL WHEEL PULLER WINNER:
Compensating For Improperly
Cut Keys**

When trying to master pin a new 6-pin Schlage lock, I found that some of the existing keys and master keys were cut a little too deep. Some were almost a full half depth too deep. No matter how I pinned the cylinder, it would not operate properly.

To compound the problem, there was such a large number of keys issued that it was impractical to recall and re-cut all of them.

I remedied the problem by removing the cylinder plug and laying the pins out in order. Then I cross-filed a small dip (about .002) across the problem chamber. Now the keys worked acceptably.

Although this worked well for me on two occasions, I would not recommend trying it where improper master wafers (anything under .030) have been used.

John Maser
Washington

[Editor's Note:
There's no question
in my mind that
when encountering
less than perfection
by previous work-
persons, we have to
get creative.
Sometimes that
creativity means
using procedures

that we would not normally use. I think the situation that John describes is one of them. However, I believe a better solution might be to use bottom pins in the top chamber(s) with the points of the pin facing downward to the plug. This would allow for a mis-cut of several thousandths of an inch in keys.

I am well aware that the proper way is to re-cut the keys, etc. However, the proper way is not always practical as John found out.]

**MAJOR MANUFACTURING WINNER:
Opening the Buffo**

I was asked to open two BUFFO discuss locks with rotating shackles. The first one took me a frustrating 45 minutes and burned up the charge on two of my Makita batteries. Since it was snowing and nasty, I decided to take the first lock back to the shop to see if there might be a better way to get the second one off the storage unit.

After about twenty minutes with a die grinder, I found the solution to opening this lock in short order. I used a 7/8" hole saw with a pilot bit to open the back of the lock up so I could access the inside of the lock case (see Illustration 6).

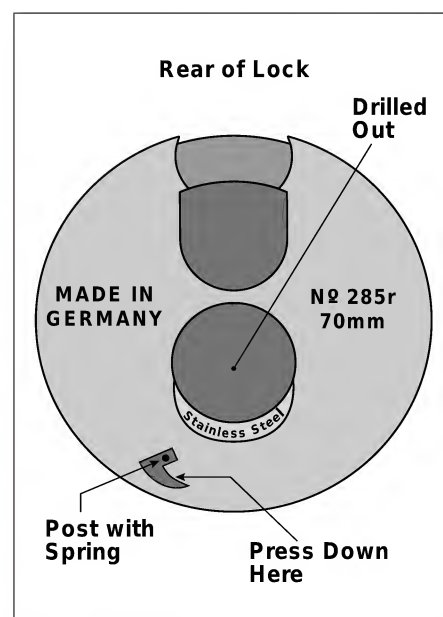


Illustration 6.

Simply insert the pilot bit in the drain hole in the back of the lock case and begin to drill. As the pilot bit begins to enter the lock case, keep a steady pressure on the drill and cut all the way through the front with the hole saw. This will cut out the cylinder and much of the innards of the lock itself.

As shown in the illustration, there is a dogging post and spring about the eight o'clock position inside the case. Simply reach in with a small screw driver or poke tool, depress the detent where shown and rotate the shackle to the unlocked position.

Larry Kanzer
Pennsylvania

**SLIDE LOCK'S "Z" TOOL WINNER:
Increasing Pick Resistance**

Although we all know that consistently good lock picking takes practice, skill and a little luck, customers are often amazed at how easily we seem to be able to pick a lock. When an apartment dweller or complex manager makes such an observation, I offer to make their locks more "pick resistant," by suggesting that I be allowed to re-pin the locks with at least one eight or nine depth cut next to a shallow cut. In the case of a Schlage master key system, this would be a two against a nine (MACS 7) or a one against an eight.

Here's an example of a ten unit (or less) complex using a Schlage five pin lock with a master key biting of 38546

The change keys could be as follows:

1. 58300
2. 58322
3. 58364
4. 58388
5. 58320
6. 78300
7. 78322
8. 78364
9. 78388
10. 78320

I know there is a rule about not using any of your master depths in any of the change keys. However, in this case, I think that the advantage against picking gained is worth utilizing the eight depth in this very limited way. Of course there are no absolute guarantees, but this will offer the customer peace of mind.

Bob Buhler
Utah

**THE SIEVEKING AUTO KEY GUIDE
WINNER:
Cutting an Opal Key**

When called to make a key for a 1971 Opal 1900, I thought the door handle had the code on it just like older VWs. It turned out that this sporty little coupe required the door panel to be removed to access the lock

and any code on it.

I picked the trunk lock and removed the latch which was held on by two screws. The BB code was stamped on the tail piece of the truck lock and was easily read using a light.

I was supposed to use a Curtis OCB-1 cam and carriage which I did not have. Instead I used a VW4 cam and VW4-A carriage. Even though the Opal uses five depths and the VW uses four, the VW-A cam has a fifth depth although it's not marked as

such. Using an OP-19 blank, I cut the key and it worked perfectly.

Like you often say Jake, there are workable alternatives available if you just stop and look for them.

John Blankenship
E-Mail

**JAKE'S GRAB BAG PRIZE WINNERS:
Club Substitutes**

I have found that when you need a key blank for The Club, that an X6 (62DT) works for a Club #4 key blank and the X7 (2DU) will work for a Club #5. I have not been able to check out



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the other club key blanks yet against other Nissan Blanks, but at the first opportunity, will do so.

Lenny Wagner
Illinois

Cards to Keep

Here's another way to insure that customers keep your business card. On the back side of the card, I have information printed regarding the handing of doors (*see Illustration 7*).

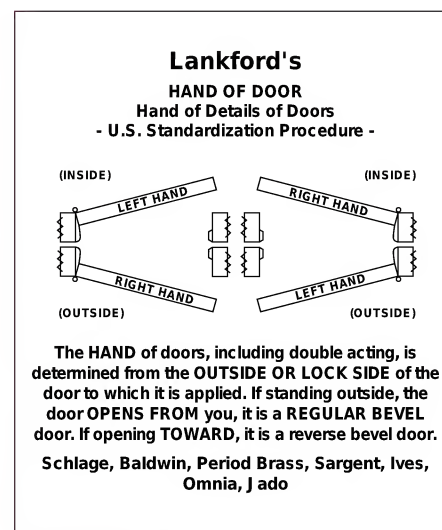


Illustration 7.

The customer keeps the card for the information on the back but they also have my name and number handy when they need locks or other work.

Beverly Penney
Tennessee

Locking Cam Locks

Having trouble getting the nut tight on a cam lock because you can't hold the case tightly enough to snug it tight? Try removing the plug and using a pair of needle nosed pliers through the front of the case.

Simply insert the needle nosed pliers, push in firmly and at the same time tighten the nut with a wrench, etc. The pliers will prevent the case from turning and the handles provide enough torque for you to hold the case in place.

To complete the job, reinsert the plug, attach the needed retainers and hardware and you're done.

Pierre Burly.
North Carolina

TRN



TEST DRIVE!

It happens all the time. You're called to service a particular vehicle that you are not very familiar with. However, you do remember reading an article on just that very car in one of the trade magazines, but which magazine was it? And what month did it run? You end up flipping through every issue of industry related material at your disposal, page after page. You know it's there somewhere, but where?

Magazines are a wonderful product that can not only enlighten you, but also entertain you. Unfortunately, utilizing magazines as a long term reference library is a nightmare.

Well, lucky for you, you don't have to, because R.W. Staples, CML has done it for you. The "Masterindex" is a guide to applied locksmithing. This publication is a comprehensive index to published locksmith literature. It encompasses the previous five year period (1991 - 1996).

PRODUCT DESCRIPTION:

The purpose of the book is to glean a maximum amount of information that assist the locksmith in his day-to-day tasks. Therefore, closed circuit TV, alarms, marketing, and advanced electronics are purposely omitted.

Each article listing is categorized as multiple listings under product and subject. For example: if you are looking for information on a Herring-Hall-Marvin safe, the information would be found in the safe subject section, under the Herring-Hall-Marvin product listings. The use of multiple article listings simplifies the searching process.

Masterindex



FEATURES:

The Masterindex covers such magazines as: Keynotes '91 - '96; Locksmith Ledger '91 - '96; *The National Locksmith* '91 - '96; Reed Security Reporter '93 - '96; Safe & Vault Technology / SAVTA Bulletins '91 - '96; and the National Safeman / McOmie Files '92 - '96. Titles indexed are: Access Control; Exit Devices; Auto Lock Servicing; Car Opening; Codes; General Locksets & Padlocks; Master keying; Tricks of the Trade and Safesmithing;

There are also additional features such as: Auto Bonus; Bonus Section; Acronym Dictionary; Locksmithing Resource Directory; Drop-in & Splining; Manufacturers Distribution Directory and a Safe Bonus.

There are six defining categories provided for each department, such as: Make; Subject; Author; Publication; Issue/ Page; and Comment. The "Make" will indicate

what product is covered. The "Subject" will indicate what the article is about, such as installation, angle drilling etc. The "Author" lists who wrote the article. The "Publication" lists which magazine featured the article. The "Issue/ Page" indicate what month and year the article was published and on which page. The "Comments" are from the author to further describe each article topic.

DESIGN:

The Masterindex is designed in a 14" x 8-1/2" book which is loose leafed tied by binding straps. This is not the best way to assemble a book because it lends itself to a flimsy feeling book. It does however, allow for expansion when updates are published, which is why binding straps were chosen.

CONCLUSION:

There is quite a bit of information contained in the Masterindex. The only shortfall of the publication is that it only covers the past five years and closed circuit TV, alarms, marketing, and advanced electronics are not included.

Regardless, the book will greatly simplify the search and seizure procedure most will need to endure when looking for a particular article.

The price of the Masterindex is \$50.00 and available through *The National Locksmith*. **INL**

IN SUMMARY:

The Masterindex is an easy to use, neatly organized directory designed to quickly find a particular article topic published in one of six trade publications.

PRICE:

\$50.00 Available through *The National Locksmith*.

TEST DRIVE RESULTS:

A good reference directory for technical articles published in a variety of locksmith publications.